Standalone DVR User’s Manual

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Welcome

Thank you for purchasing our DVR!
This operating manual is designed to be a reference tool for the installation and operation of your system.
Here you can find information about this series DVR features and functions, as well as a detailed menu tree.
Before installation and operation please read the following safeguards and warnings carefully!

Important Safeguards and Warnings

1．Electrical safety

All installation and operation here should conform to local electrical safety codes.
We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

2．Transportation security

Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.

3．Installation

Keep upwards. Handle with care.
Do not apply power to the DVR before completing installation.
Do not place objects on the DVR

4．Qualified engineers needed

All the examination and repair work should be done by the qualified service engineers.
We are nor liable for any problems caused by unauthorized modifications or attempted repair.

5．Environment

The DVR should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.

6. Accessories

Be sure to use all the accessories recommended by manufacturer.
Before installation, please open the package and check all the components listed below are included:

- One power cable
- One Ethernet cable
- HDD cables
- Alarm & relay terminal blocks
- Extensional cable for audio, loop & matrix (optional)
- One remote control
- One USB mouse
- One CD (including DVR manual, client & small tools)
- A package of installation fittings

.

Note: Any changes of this manual made to the actual product are subjects to no further notification.

1 FEATURES AND SPECIFICATIONS

1.1 Features

This series DVR has the following features:

- Most popular model, widely accepted in the worldwide security industry
- H.264 compression algorithm ideal for standalone DVR
- Real-time live display up to 16 cameras, 100/120 fps recording for D1 (704x576), 400/480 fps recording for CIF (352x288)
- USB2.0 and SATA HDD supported
- Pentaplex function: live, recording, playback, backup & remote access
- 4 HDDs supported & CD-RW/DVD-RW supported
- Multiple control methods: front panel, IR remote control, keyboard, USB mouse and network keyboard.
- Smart video detection: motion detection, camera masking, video loss.
- Smart camera settings: privacy masking, camera lock, color setting, and title display
- Pan Tilt Zoom and Speed Dome Control: more than 60 protocols supported, preset, scan, auto pan, auto tour, pattern, auxiliary function supported. And with speed dome, 3D intelligent positioning function supported.
- Easy backup methods: USB devices, CD-RW/DVD-RW & network download
- Alarm triggering screen tips, buzzer, PTZ preset, matrix output, e-mail, FTP upload.
- Smart HDDs Management: non-working HDD hibernation, HDD faulty alarm, Raid function.
- Powerful network software: built-in web server, CMS. Networking access for remote live viewing, recording, playback, setting, system status, event log, e-mail & ftp function.

1.2 Specifications

System

Main Processor	High performance embedded microprocessor
Operating System	Embedded LINUX
System Resources	Pentaplex function: live, recording, playback, backup & remote access
User Interface	GUI, on-screen menu tips.
Control Device	USB mouse, keyboard, IR remote control, network keyboard,.
Input Method	Numeral/Character/Denotation
System Status	HDD status, data stream statistics, log record, bios version, on-line user and etc.

Video

Video Input	4/8/16 Channel, BNC, 1.0Vp-p, 75Ω, looping(optional)
Video Output	2 channel TV output BNC, 1.0Vp- p, 75Ω,1 VGA output

Video Standards	PAL (625Line , 50f/s) , NTSC (525Line , 60f/s)
Video Compression	H.264
Video Resolution	Format NTSC PAL D1 (4CIF) 704*480 704*576 CIF 352 *240 352 *288
Video Recording	CIF: PAL 1f/s~25f/s NTSC 1f/s~30f/s D1: PAL 1f/s~6f/s NTSC 1f/s~7f/s
Video Display Split	Full and multiple screen display, 1 / 4 / 8 / 9 / 16
Tour Display	Support
Image Quality	1~6 level (level 6 is the best)
Privacy Masking	Self-defined four-sided zone for privacy masking for each camera
Camera Lock	Camera locked for users
Camera Adjustment	Adjust color according to different time period
Video Information	Camera title, time, video loss, camera lock, motion detection, recording
TV Output Adjustment	Adjust TV output color & display zone

Audio

Audio Input	4 channel, BNC, 200-2800mV, 30KΩ
Bidirectional Talk Input	1 channel, BNC, 200-2800mV, 30KΩ
Audio Output	1 channel, BNC, 200-3000mv, 5KΩ
Audio Compression	ADPCM

Video Detection & Alarm

Motion Detection	Zones: PAL 396 (22*18)/NTSC 330(22*15) detection zones Sensitivity: 1~6 (level 6 is highest) Trigger recording, PTZ movement, tour, alarm & FTP
Video Loss	Trigger recording, PTZ movement, tour, alarm & FTP
Camera masking	Trigger recording, PTZ movement, tour, alarm & FTP
Alarm Input	4/16/16 channel, programmable, ground, manual open/closed Trigger recording, PTZ movement, tour, alarm & FTP
Relay output	3/6/6 channel, 30VDC, 1A, NO/NC, form-C,

Hard Disk

Hard Disk	4 SATA ports, 4 HDDs supported.
Space Occupation	Audio ：14.4MB/H Video ：56～400MB/H
HDD Management	Hard disk hibernation technology, HDD faulty alarm & Raid (Redundancy)

Record, Playback & Backup

Recording Mode	Manual, continuous, video detection (including motion detection, camera masking, video loss), Alarm

Recording Priority	Manual >Alarm >Video Detection >Continuous.
Recording Interval	1 to 120 minutes (default: 60 minutes)
Overwrite Mode	Support
Raid Function	Support
Search Mode	Time/Date, Alarm, Motion Detection & exact search (accurate to second)
Playback	1-channel playback ; Play, pause, stop, rewind, fast play, slow play, next file, previous file, next camera, previous camera, full screen, repeat, shuffle, backup selection.
Digital Zoom	Selected zone can zoom into full screen during playback
Backup Mode	Flash stick/ USB HDD/ USB CD-RW/DVD-RW/ built-in SATA Burner/ network download
Network	
Interface	RJ-45 Port (10/100M)
Network Functions	TCP/IP, DHCP, DDNS, PPPoE, E-mail, FTP
Remote operation	Monitor, PTZ control, playback, system setting, file download, log information
Auxiliary Interface	
USB Interface	2 ports, 1 for mouse control, 1 for backup.
RS232	Keyboard, PC communication
RS485	PTZ control
Environmental	
Power Supply	220V 50Hz / 110V 60Hz
Power Consumption	25W/30W/40W
Working Temperature	-10℃~ + 55℃
Power Consumption	25W/30W/40W
Working Humidity	10%~90%
Atmosphere Pressure	86kpa~106kpa
Dimension	1.5U, 440mmx460mmx68mm (W*D*H)
Weight	6.0KG
Mounting	Desktop or rack

Features and specification are subject to change without prior notice.

2 OVERVIEW AND CONTROLS

This section provides information about front panel and rear panel. When you install this series DVR for the first time, please refer to this part first.

2.1 Front Panel

This series DVR front panel is shown as in Figure 2-1 .

Figure 2-1

SN	Button Name	Icon	Function
1	VFD & Status Indicator lights		Indicate the status of DVR and display system time.
2	Cancel	Esc	Go back to previous menu or cancel current operation in function menu interface.
			In video playback mode, click this button to go back to real-time monitor mode.
	Assistant	Fn	In 1-ch monitor mode: pop up assistant function：PTZ control and Video color
			In motion detection interface, working with direction keys to finish setup.
			Clear: Press Fn for 1.5 seconds to clear all contents in current text box.
			In preview interface (There is no other menu), click this button for 3 seconds to switch between TV/VGA.
			In text box input mode, press this button to switch between numeral/English characters (small/capitalized).
			Special combined operation in some menus.
	Shift	Shift	In input mode, switch between numeral/character and other function keys.
			In four-window preview mode, it can work as Fn button.
	Record	Rec	Enable or disable record function manually. In record control menu, working with direction keys to select recording channel.
3	Play/pause	⏵II	In playback mode: play or pause video.
			In text box: input number 5.

	Reverse/pause	II◀	In playback mode: reverse play video.
			In text box: input number 6.
	Fast play	▶▶	In playback mode: click this button to switch between various fast play speeds and normal playback.
			In text box: input number 7.
	Slow play	▶	In playback mode: click this button to switch between various slow play speeds and normal playback.
			In text box: input number 8.
	Next	▶I	In playback mode: play the next video.
			In text box: input number 9.
	Previous	I◀	In playback mode: play the previous video.
			In text box: input number 0
4	Direction keys	∨ ∧	Move cursor
			In text box: increase or decrease numerals.
			In dropdown list, modify current setup.
			In monitor mode, click this button to go to the 1st channel-1 or 4th channel. (Single-channel monitor mode).
			In text box input mode, press SHIFT and then use up/down key to input number 1 or 4.
		< >	In the main menu or sub-menu interface, click left or right key to move cursor.
			In playback mode: Click left/right key to select corresponding option in the function menu.
			In monitor mode, click left/right key to go to 2nd channel or 3rd channel (single-window monitor mode)
			In text box input mode, press SHIFT and then use left/right key to input number 2 or 3.
5	USB port		To connect USB storage device, USB mouse or USB CD/DVD-RW
6	Power button	POWER	Power button, press this button for three seconds to shut down DVR.

Please insert the USB Mouse to operate the DVR.

Figure 2-2

2.2 Rear Panel

2.2.1 Overview

Please refer to Figure 2-3 for real panel information.

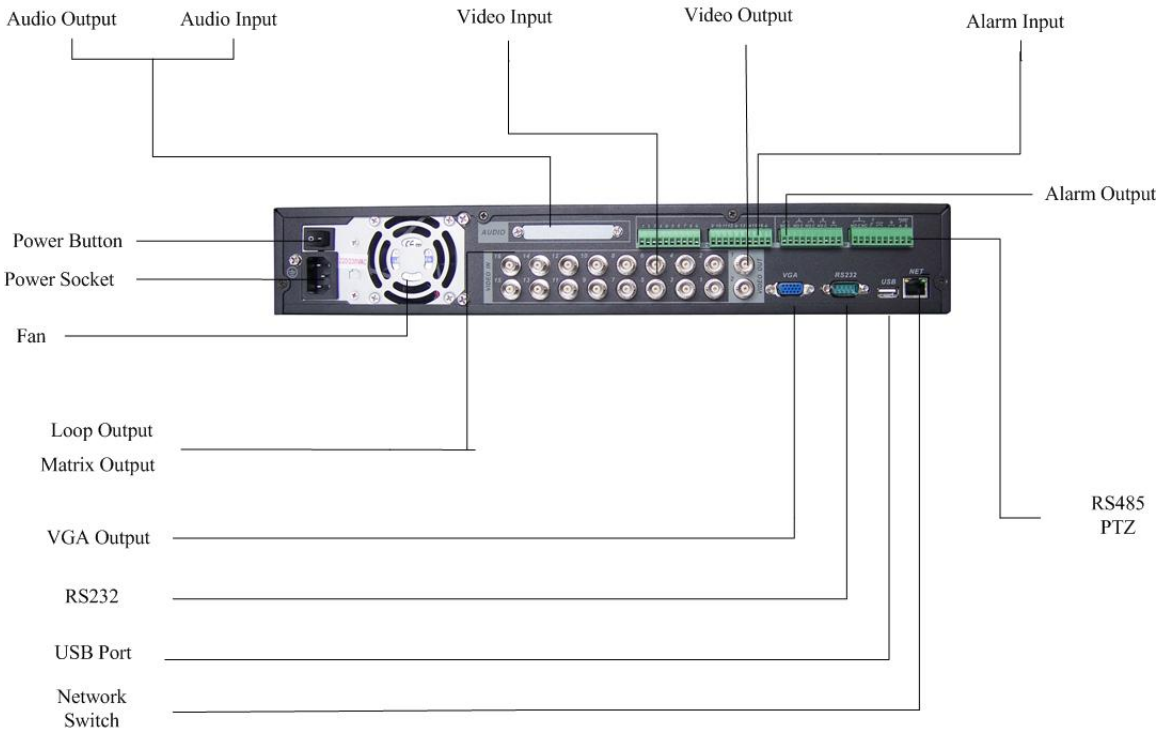


Figure 2-3

2.2.2 Connection Sample

Here is a connection sample for your reference. See Figure 2-4.

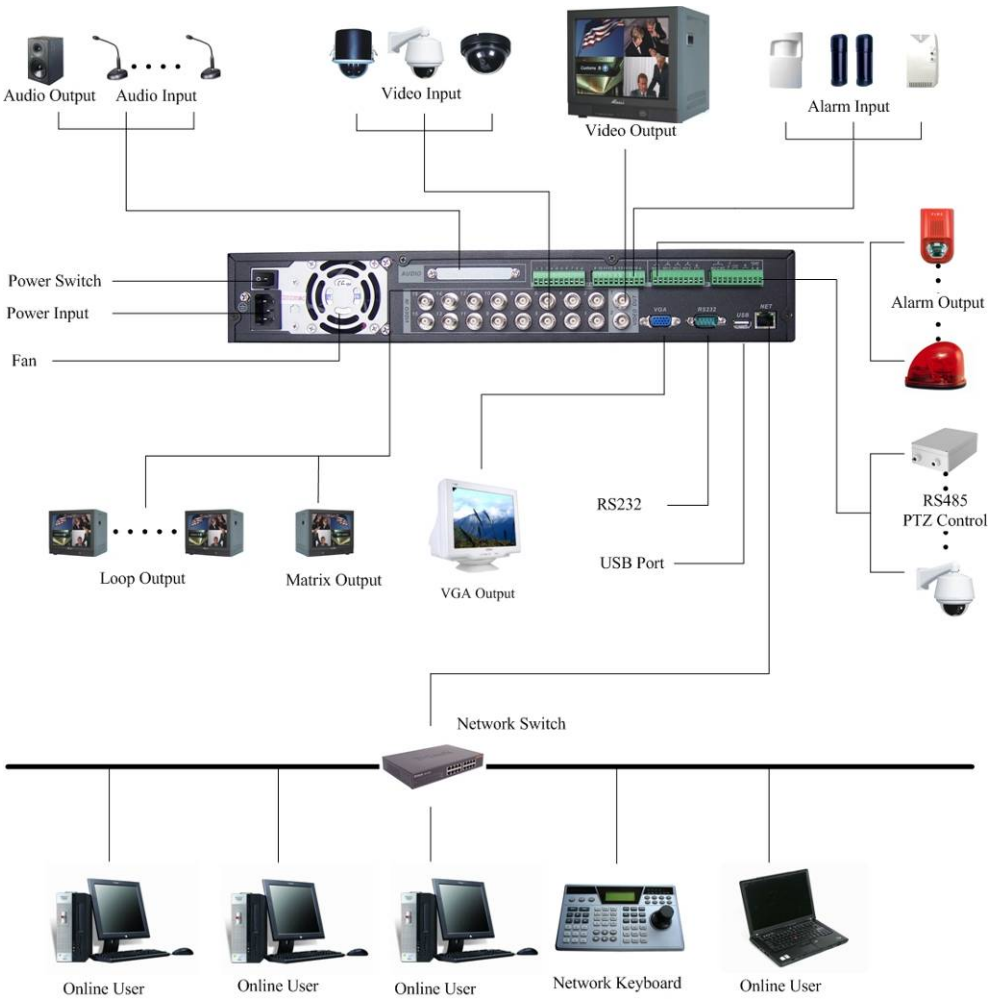


Figure 2-4

2.3 Remote Control

The remote control interface is shown here:

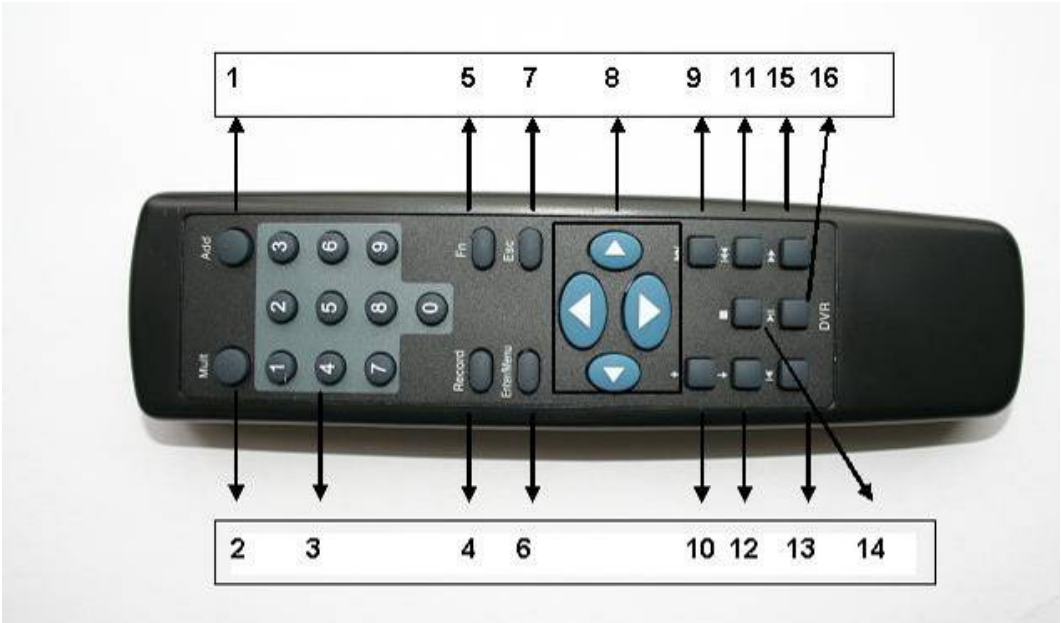


Figure 2-5

Serial Number	Function
1	remote switch
2	Multiple-window switch
3	0-9 number key
4	Record
5	Auxiliary key
6	Confirm /menu key
7	Cancel
8	Direction key
9	forward
10	Previous
11	Back
12	Next
13	Slow play
14	Stop
15	Fast play
16	Play/Pause

2.4 Mouse Control

Left click mouse	System pops up password input dialogue box if you have not logged in. In real-time monitor mode, you can go to the main menu.
	When you have selected one menu item, left click mouse to view menu content.
	Implement the control operation.
	Modify checkbox or motion detection status.
	Click combo box to pop up drop down list

<table>
<tr><td></td><td>In input box, you can select input methods. Left click the corresponding button on the panel you can input numeral/English character (small/capitalized). Here ← stands for backspace button. __ stands for space button.

In English input mode: _stands for input a backspace icon and ← stands for deleting the previous character.

In numeral input mode: _ stands for clear and ← stands for deleting the previous numeral.

When input special sign, you can click corresponding numeral in the front panel to input. For example, click numeral 1 you can input“/” , or you can click the numeral in the on-screen keyboard directly.
 </td></tr>
<tr><td rowspan="2">Double left click mouse</td><td>Implement special control operation such as double click one item in the file list to playback the video.</td></tr>
<tr><td>In multiple-window mode, double left click one channel to view in full-window. Double left click current video again to go back to previous multiple-window mode.</td></tr>
<tr><td rowspan="3">Right click mouse</td><td>In real-time monitor mode, pops up shortcut menu: one-window, four-window, nine-window and sixteen-window, Pan/Tilt/Zoom, color setting, search, record, alarm input, alarm output, main menu.
Among which, Pan/Tilt/Zoom and color setting applies for current selected channel.
If you are in multiple-window mode, system automatically switches to the corresponding channel.

</td></tr>
<tr><td>Exit current menu without saving the modification.</td></tr>
</table>

Press middle button	In numeral input box: Increase or decrease numeral value.
	Switch the items in the check box.
	Page up or page down
Move mouse	Select current control or move control
Drag mouse	Select motion detection zone
	Select privacy mask zone.

2.5 Virtual Keyboard & Front Panel

2.5.1 Virtual Keyboard

The system supports two input methods: numeral input and English character (small and capitalized) input.

Move the cursor to the text column, the text is shown as blue, input button pops up on the right. Click that button to switch between numeral input and English input (capitalized and small), Use > or < to shift between small character and capitalized character.

2.5.2 Front Panel

Move the cursor to the text column. Click Fn key and use direction keys to select number you wanted. Please click enter button to input.

3 Installation and Connections

Note: All the installation and operations here should conform to your local electric safety rules.

3.1 Check Unpacked DVR

When you receive the DVR from the shipping agency, please check whether there is any visible damage to the DVR appearance. The protective materials used for the package of the DVR can protect most accidental clashes during transportation. Then you can open the box to check the accessories.
Please check the items in accordance with the list on the warranty card. Finally you can remove the protective film of the DVR.

3.2 HDD Installation

3.2.1 Choose HDDs

We recommend Seagate HDD of 7200rpm or higher.

3.2.2 Calculate HDD Size

This series have no limit to HDD capacity. You can use 120G-750G HDD to guarantee higher stability.
The formula of total HDD size is:
Total Capacity (MB) = Camera Amount * Recording Hours * HDD Usage Per Hour (M/h)
H.264 compression is ideal for standalone DVRs. It can save more than 30% HDD capacity than MPEG4. When you calculate the total HD capacity, you should estimate the average HDD capacity per hour for each channel.
For example, for a 4-ch DVR, the average capacity of HDD usage per hour per channel is 200M/h. Now if you hope the DVR can record the video 12 hours each day for 30 days, the total capacity of HDDs needed is: 4 channels * 30 days * 12 hours * 200 M/h = 288G. So you need to install one 300G HDD or 2 160G HDDs.

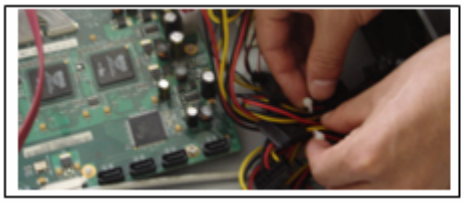
3.2.3 HDD Installation

Data ribbons, fastening screws and smart HDD shelf design are already provided in the accessories.

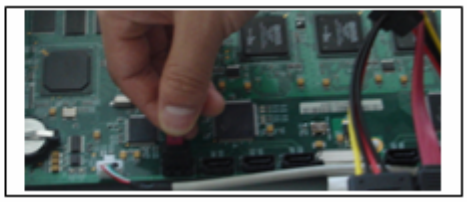
Please follow the instructions below to install hard disk.

①Dismantle the screws from the front and real panels.

②Remove the upper cover



③Unfasten the HDD power cable.



④Connect to data connection cable and then plug the HDD power cable.

⑤ Fix the HDD in the DVR.

When installing HDD, please keep the side of the screw holes face down.

⑥ Place the upper cover back and screw firmly.

After HDD installation, please check connection of data ribbon and power cord.
Note:
The HDD ports are SATA and there is no need to set master/slave HDD.

3.3 CD/DVD Burner Installation

For USB burners, you need to install USB series burner.
This series DVR is compatible with various burner brands popular in today's market.

3.4 Desktop and Rack Mounting

3.4.1 Desktop Mounting

To prevent surface damage, please make sure that the rubber feet are securely installed on the four corners of the bottom of the unit.

Position the unit to allow for cable and power cord clearance at the rear of the unit.
Be sure that the air flow around the unit is not obstructed.

3.4.2 Rack Mounting

The DVR occupies two rack units of vertical rack space.
The hardware necessary to mount the DVR into a rack is supplied with the unit.
Rear doors may be used only on rack columns that are more than 26 inches (66.0 cm) deep.
Install the cabinet in ventilated place. Avoid extreme heat, humid or dusty conditions.
You can use a soft dry brush to clean opening outlet, cooling fan and etc regularly.

3.5 Connecting Power Supply

Please check input voltage and device power button match or not.
We recommend you use UPS to guarantee steady operation, DVR life span, and other peripheral equipments operation such as cameras.

3.6 Connecting Video Input and Output Devices

3.6.1 Connecting Video Input

The DVR automatically detects the video standard (PAL or NTSC) whenever you connect a video input. It accepts both color and black-and-white and analog video.
NOTE:

- Enabling line lock on cameras may cause video distortion. There may be noise in the camera's power source. If video from one or more cameras is distorted, we recommend you disable line lock on the camera as your first troubleshooting step.
- If a video distribution amplifier is installed between the video source and the DVR, do not set the output video level above 1 Vp-p.

To connect each video input:
1. Connect a coaxial cable to the camera or other analog video source.
2. Connect the coaxial cable to the video in connector on the rear panel.
Please refer to Figure 3-1 for more information.

NOTE:
You need to use a BNC installation tool to connect coaxial cables to the rear panel.

Figure 3-1

3.6.2 Connecting Video Output

This section provides information about physically connecting video display devices to the DVR. See Figure 3-2.

If you connect the DVR with a TV monitor or VGA monitor, the DVR can automatically detects the monitor type. And without any output device, by default, the DVR is configured to use a TV monitor. In this case, if your application requires a VGA monitor, you have to press the button "FN" or Shift on the front panel,or restart the DVR.

NOTE:

Video output 1 and VGA can't display at the same time. But Video output 2 can display properly with Video Output 1 or VGA.

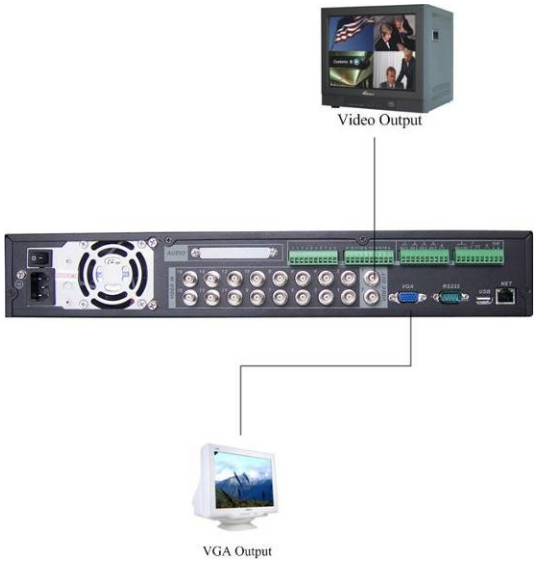


Figure 3-2

3.7 Connecting Audio Input & Output, Bidirectional Audio, Looping Video, Matrix

For the 25-pin or 37-pin interface, different models include different functions. See Figure 3-3.

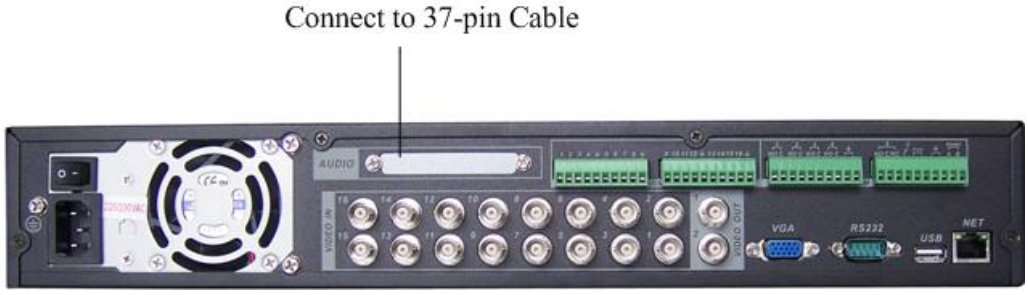


Figure 3-3

3.7.1 Audio Input/One Audio Output

For example, D-8016A 16 looping video inputs, 1 matrix video output, 4 audio inputs, I bidirectional audio input, 1 audio output.
The DVR encodes audio and video signals simultaneously, which lets you control audio at the monitored location.
To set up audio:
1. Make sure your audio input device matches the RCA input level. If the device and RCA input levels do not match, audio distortion problems may occur.
2. Make sure the audio connector is wired as follows:
3. Connect a line input device or pre-amplified microphone to the audio connector for the video channel on the rear panel.
Please refer to Figure 3-4.

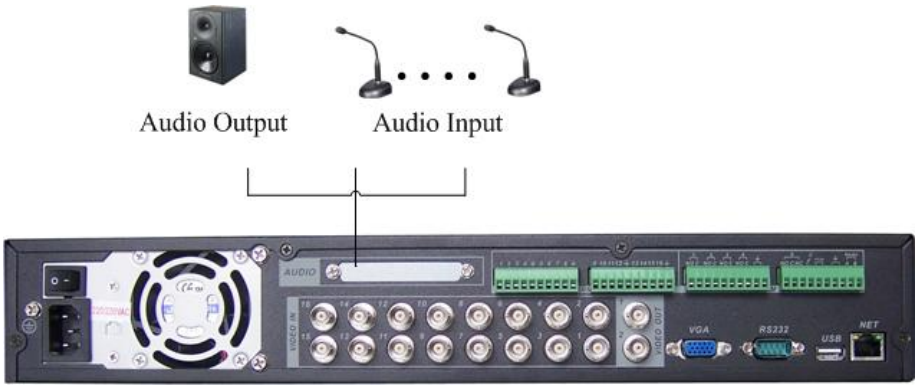


Figure 3-4

3.7.2 Looping video

The DVR supports looping video. It passes the video input to a monitor or other analog video device.
To use looping video:
1. Connect a coaxial cable to the video out connector on 37-pin interface
Please note you need to use a BNC installation tool to connect coaxial cables to the rear panel.
2. Connect the other end of the coaxial cable to the analog device.

3.7.3 Matrix Video Output

Use video matrix output connector during installation to display video sequentially from each video input. The unit displays each channel for selected seconds. You can use this feature to verify camera installation.
To display video from each connected video source:
1. Connect a video monitor to the video matrix output connector.
2. Turn the DVR on, the monitor, and each video matrix output source.
3. Verify the video from each source and troubleshoot as necessary.
Please refer to Figure 3-5.

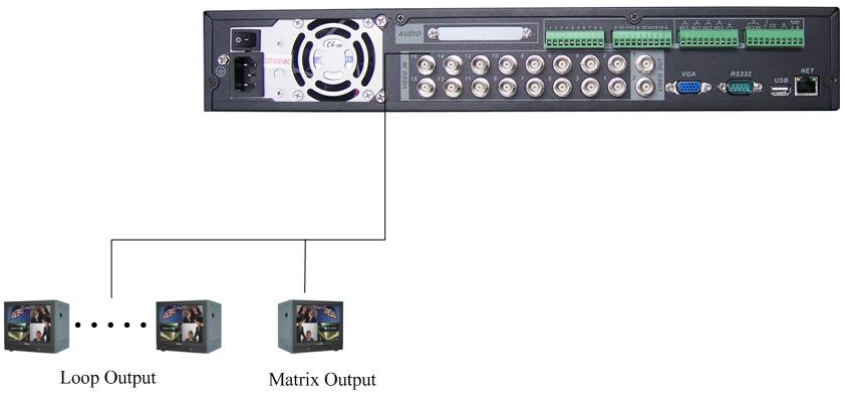


Figure 3-5

3.7.4 Alarm Input and Relay Output

The DVR offers 16 alarm inputs for external signaling devices, such as door contacts or motion detectors. Each alarm input can be either normally open or normally closed. Once configured, an alarm input can invoke many different activities, including triggering a relay device, sending an alert to a security office or storing pre-alarm video to the DVR.

3.7.5 Alarm Input

You should check your alarm input mode is grounding alarm input or not.
For this series DVR, grounding signal is needed for alarm input.
If you need to connect two units or one DVR and other device, please use relay to separate them.
Please refer to Figure 3-6 for more information.

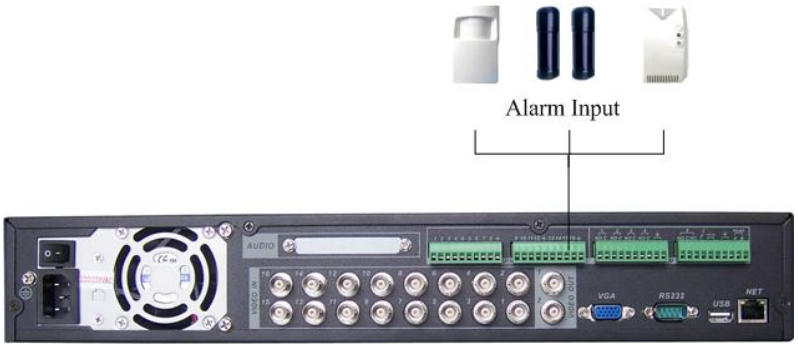


Figure 3-6

3.7.6 Alarm Output

Do not connect alarm output port directly with high power load (no more than 1 A) in case of heavy current.
You can use the co-contactor to realize the connection between the alarm output port and the load.
Please refer to Figure 3-7 for more information.

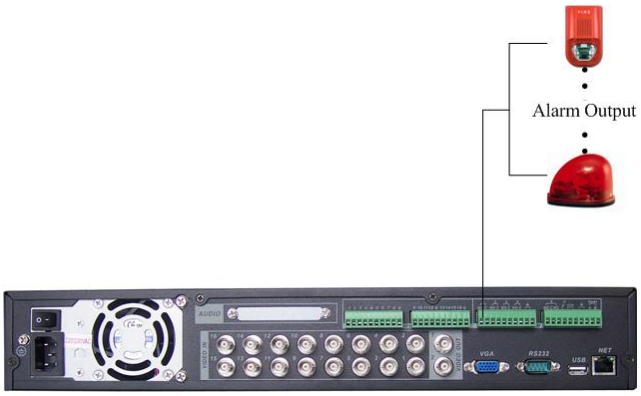


Figure 3-7

3.7.7 Alarm Input and Output Details

You can refer to the following sheet and Figure 3-8 for alarm input and output information.

Parameter	Grounding Alarm
Ground	Ground line
Alarm Input	1, 2, …, 16
Relay Output	1,2,3,4: NO and C(Normally Open and Com) 5: NO,C and NC(Normally Open, Com, Normally Closed) 6: Ctrl 12V(This is used for reset the senor)
485 A、B	485 communication port. They are used to control devices such as PTZ.
+12（C）	This should input an external power input.

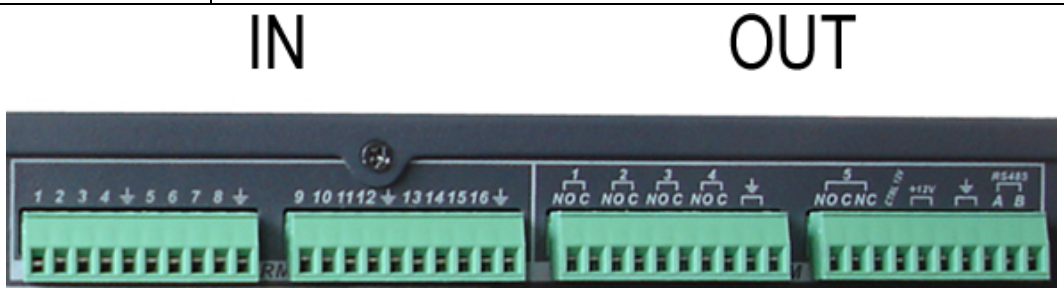


Figure 3-8

Please refer to the following content for alarm input port information. See Figure 3-9.

- 8/16-ch grounding alarm inputs. (Normal open or Normal close type)
- Please parallel connect COM end and GND end of the alarm detector (Provide external power to the alarm detector).
- Please parallel connect the Ground of the DVR and the ground of the alarm detector.
- Please connect the NC port of the alarm sensor to the DVR alarm input (ALARM)
- If you need to reset the touched-off alarm remotely, you can use DVR to supply controllable 12 V power to the alarm detector such as the smoke detector.
- Use the same ground with that of DVR if you use external power to the alarm device.

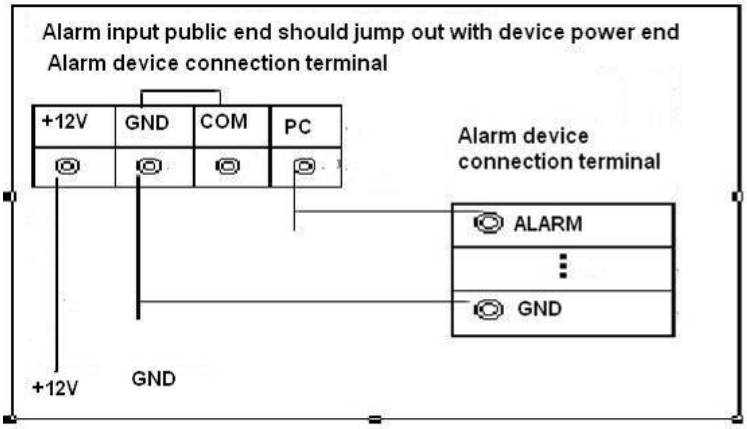


Figure 3-9

3.7.8 Relay Output Description

- 6 ways relay alarm output. Provide external power to external alarm device.
- To avoid over loading, please read the following relay parameters sheet carefully. (See below table)
- The controllable +12v can be used to restore the smoke detector.

Please refer to Figure 3-10 for alarm input module information.

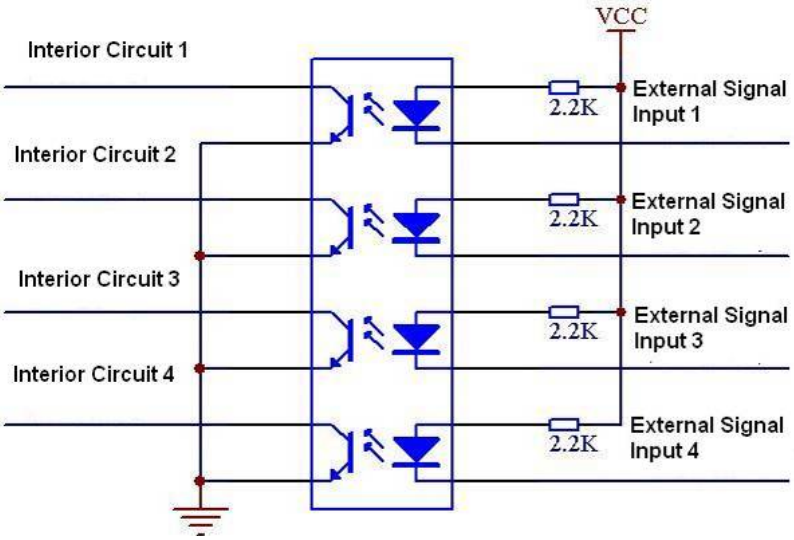


Figure 3-10

Please refer to Figure 3-11 for alarm output module information.

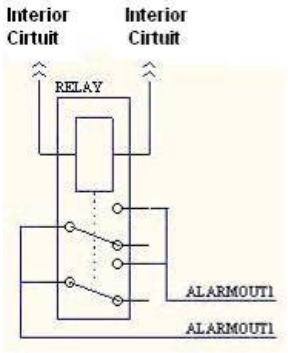


Figure 3-11

Relay Specification

Model:	**JRC-27F**	
Material of the touch	Silver	
Rating （resistance load）	Rated switch capacity	30VDC 2A, 125VAC 1A
	Maximum switch power	125VA 160W
	Maximum switch voltage	250VAC, 220VDC
	Maximum switch currency	1A
Insulation	between touches with same polarity	1000VAC 1minute
	between touches with different polarity	1000VAC 1minute
	between touch and winding	1000VAC 1minute
Surge voltage	between touches with same polarity	1500V (10×160us)
Length of open time	3ms max	
Length of close time	3ms max	
Longevity	Mechanical	50×106 MIN (3Hz)
	Electrical	200×103 MIN (0.5Hz)
Temperature	-40□ ~+70□	

3.8 RS232

You can connect the DVR with POS or Keyboard through RS232.
With POS system, the DVR can communicate through RS232 and network. For the POS system, the DVR can integrate the text content and even search the record through the info.
The series DVR also support NKB operation. You can operate the DVR from the keyboard controls instead of using the control pad on the front panel of the unit.
To connect a NKB keyboard to the DVR:

1. Assemble the KBD keyboard according to the instructions in its accompanying installation manual.
2. Connect the KBD keyboard into one of the RS232 ports on the DVR or through network.

3.9 RS485

When the DVR receives a camera control command, it transmits that command up the coaxial cable to the PTZ device. RS485 is a single-direction protocol; the PTZ device can't return any data to the unit. To enable the operation, connect the PTZ device to the RS485(A,B) input on the DVR. Since RS485 is disabled by default for each camera, you must enable the PTZ settings first. This series DVRs support multiple protocols such as Pelco-D, Pelco-P.
To connect PTZ devices to the DVR:
1. Connect RS485 A (+), B (-) on the DVR rear panel.
2. Connect the other end of the cable to the proper pins in the connector on the camera.
3. Follow the instructions for configuring a camera to enable each PTZ device on the DVR.

3.10 Other Interfaces

There are still other interfaces on the DVR, such as USB ports. You can refer to the Figure 3-12 for more information.

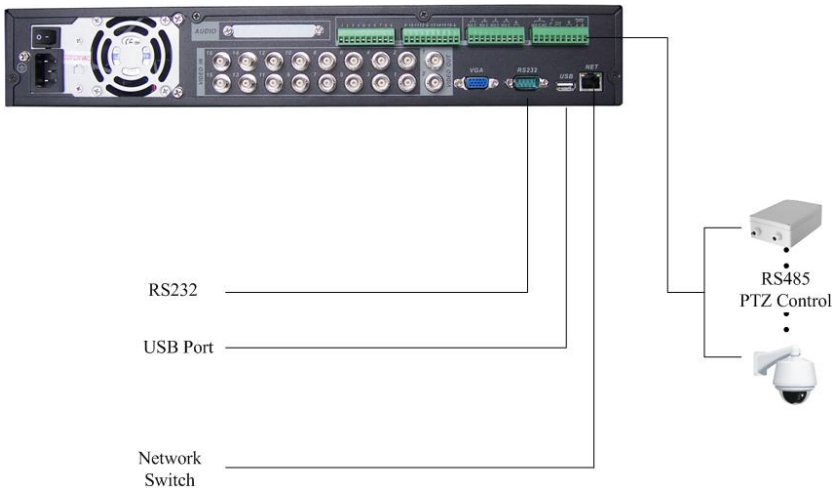


Figure 3-12

4 Overview of Navigation and Controls

Before operation, please make sure you have properly installed HDDs and all the cable connections.

4.1 Login, Logout & Main Menu

4.1.1 Login

When the system boots up, default video display is in multiple-window mode. Click Enter or left click mouse, you can see the login interface. See Figure 4-1. System consists of four accounts:

- Username: admin. Password: admin. (administrator, local and network)
- Username: 888888. Password: 888888. (administrator, local only)
- Username: 666666. Passwords: 666666(Lower authority user who can only monitor, playback, backup and etc.)
- Username: default. Password: default(hidden user)

For your system security, please modify you password after first login.

You can use USB mouse, front panel, remote controller or keyboard to input.

About input method: Click 123 to switch between numeral, English character (small/capitalized) and denotation.

Note: 3 times login failure within 30 minutes will result in account lock!

Figure 4-1

4.1.2 Main Menu

When you login, the system main menu is shown as below. See Figure 4-2. There are total six icons: search, information, setting, backup, advanced and shutdown. Move the cursor to highlight the icon, then double click mouse to enter the sub-menu.

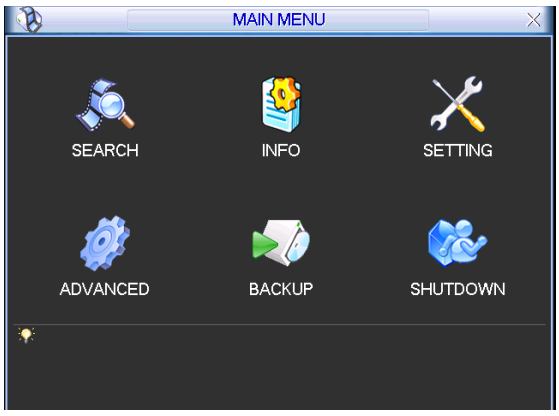


Figure 4-2

4.1.3 Logout

There are two ways for you to log out.

One is from menu option:

In the main menu, click shutdown button, you can see an interface is shown as below. See Figure 4-3.

Figure 4-3

There are several options for you. See Figure 4-4.

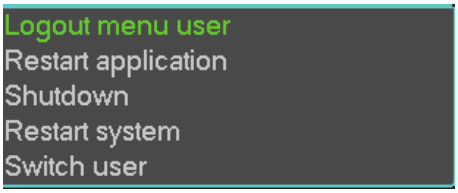


Figure 4-4

The other way is to press power button on the front panel for at least 3 seconds, system will stop all operations. Then you can click the power button in the rear panel to turn off the DVR.

4.1.4 Auto Resume after Power Failure

The system can automatically backup video and resume previous working status after power failure.

4.1.5 Replace Button Battery

Please make sure to use the same battery model if possible.

We recommend replace battery regularly (such as one-year) to guarantee system time accuracy.

4.2 Recording Operation

4.2.1 Live Viewing

When you login, the system is in live viewing mode. You can see system date, time and channel name. If you want to change system date and time, you can refer to general settings (Main Menu->Setting->General). If you want to change the channel name, please refer to the display settings (Main Menu->Setting->Display)

1		Recording status	3		Video loss
2		Motion detection	4		Camera lock

Note: Please refer to the following sheet for channel status. stands for opening switch function, stands for closing switch function.

4.2.2 Manual record

Note:

You need to have proper rights to implement the following operations. Please make sure the HDDs have been properly installed.

4.2.2.1 Manual record menu

There are two ways for you to go to manual record menu.

- Right click mouse or in the main menu, Advanced->Manual Record.
- In live viewing mode, click record button in the front panel or record button in the remote control.

Manual record menu is shown as in Figure 4-5.

4.2.2.2 Basic operation

There are three statuses: schedule/manual/stop. Highlight icon "○" to select corresponding channel.

- Manual: the highest priority. After manual setup, all selected channels will begin ordinary recording.
- Schedule: channel records as you have set in recording setup (Main Menu->Setting->Schedule)
- Stop: all channels stop recording.

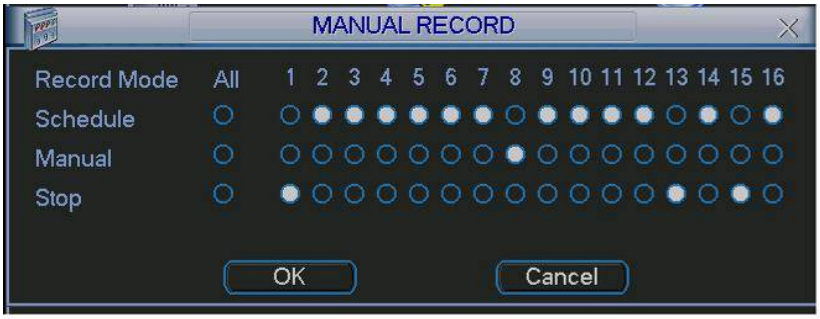


Figure 4-5

4.2.2.3 Enable/disable record

Please check current channel status: "○" means it is not in recording status, "●" means it is in recording status.

You can use mouse or direction key to highlight channel number. See Figure 4-6.

Figure 4-6

4.2.2.4 Enable all channel recording

Highlight ○ below All, you can enable all channel recording.

- All channel schedule record

Please highlight “ALL” after “Schedule”. See Figure 4-7.
When system is in schedule recording, all channels will records as you have previously set (Main menu->Setting->Schedule).
The corresponding indication light in front panel will turn on.

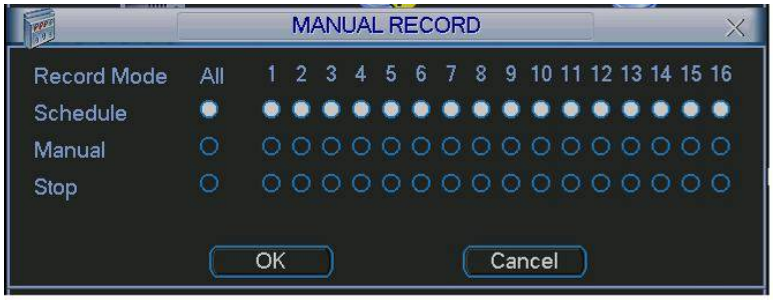


Figure 4-7

- All channel manual record

Please highlight “ALL” after “Manual.” See Figure 4-8.
When system is in manual recording, all scheduled set up you have set in will be null ((Main menu->Setting->Schedule)).
You can see indication light in front panel turns on, system begins manual record now.

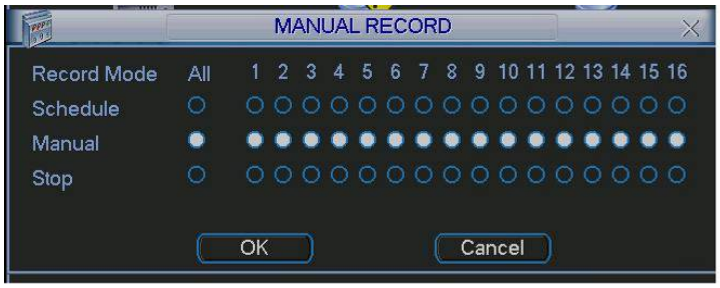


Figure 4-8

4.2.2.5 Stop all channel recording
Please highlight “ALL” after “Stop”. See Figure 4-9.
System stops all channel recording no matter what mode you have set in the menu (Main menu->Setting->Schedule)

Figure 4-9

4.3 Search & Playback

4.3.1 Search Menu

There are two ways for you to go to search menu.

- Click Pause/Play button in the remote control.
- Click search in the main menu.

Search interface is shown as below. See Figure 4-10.

Usually there are three file types:

- R: regular recording file.
- A: external alarm recording file.
- M: motion detection recording file
- C: card and pos test overlay recording file(For some special series only)

There are several playback windows. This System supports 1-ch playback.

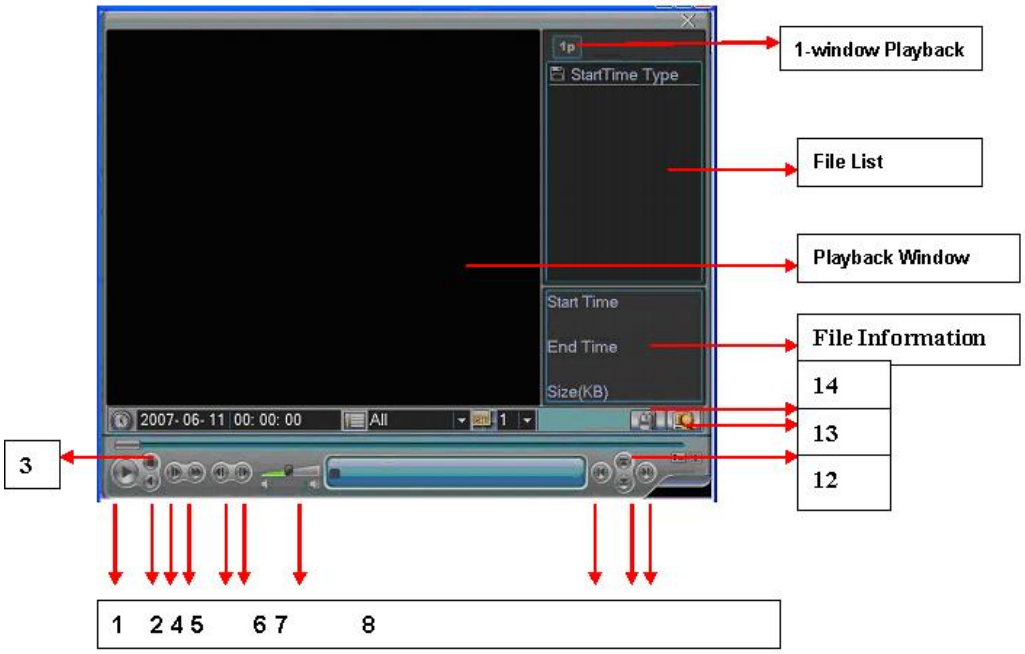


Figure 4-10

Please refer to the following sheet for more information.

Serial Number	Function
1	Play
2	Backward
3	Stop
4	Slow play
5	Fast play
6	Previous frame
7	Next frame
8	Volume
9	Previous file
10	Next channel
11	Next file
12	Previous channel
13	Search
14	Backup

4.3.2 Basic Operation

4.3.2.1 Playback

There are various search modes: video type, channel number or time. The system can max display 128 files in one screen. You can use up/down button to turn page.

Select the file name and double click mouse (or click enter button), you can view file content.

4.3.2.2 Accurate playback

Input time (h/m/s) in the time column and then click playback button, system can operate accurate playback.

4.3.2.3 Synchronized playback function when playback

During playback process, click numeral key, system can switch to the corresponding channel video of the same time.

4.3.2.4 Digital zoom

When the system is in full-screen playback mode, drag your mouse in the screen to select a section and then left click mouse to realize digital zoom. You can right click mouse to exit.

4.3.2.5 File backup

System supports backup operation during search. You can draw a √ before file name (multiple choices). Then click backup button (Button 14 in Figure 4-10).

4.3.2.6 Slow playback and fast playback

Please refer to the following sheet for slow play and fast playback function.

Button	Illustration	Remarks
Fast play button ⏩	In playback mode, click this button to switch between various fast play modes such as fast play 1,fast play 2 and more.(Fast play 1 means fast play level 1 or not about speed)	Frame rate may vary due to different versions.
Slow play button ▶ (Or you can turn the outer ring counter clockwise.)	In playback mode, click this button to switch between various slow play modes such as slow play 1 or slow play 2.	
3、Play/Pause⏯	In slow playback mode, click this button to switch between play/pause modes.	
4、Previous/next	In playback mode, you can click ⏴ and ⏵❙ to view previous or next video in current channel.	

4.3.2.7 Fast forward/fast backward and frame by frame playback

Special Functions of Shuttle and Jog	Illustration	Remarks

Fast forward(outer ring clockwise)	When playback, turn the shuttle (outer ring) clockwise one round: you can view in fast level 1 Turn it two rounds you get fast level 2. You can continue turning to get different speed.	In forward or backward mode, double click Pause/Play button to get normal playback. Frame rate may vary due to different version.
Fast backward(outer ring counter clockwise)	When playback, turn the shuttle (outer ring) counter clock-wise one round, you can view in backward level 1. Turn it two rounds, you get backward level 2. You can continue turning to get different speed.	
Manual playback frame by frame	In playback mode, click play/pause button, slowly turn the jog (inner dial) clock-wise to view frame by frame, counter clock wise to view I frame playback.	

4.3.2.8 Backward playback and frame by frame playback

Button	**Illustration**	**Remarks**
Backward play ⏮ in playback interface.	In normal playback mode, left click backward play button, system begins backward playback. Double click backward play button again, system goes to pause mode.	When system is in backward play or frame by frame playback mode, you can click play button to go to normal playback.
Manual playback frame by frame.	Click pause button in normal playback mode, slowly turn the jog (inner dial) clock-wise to view frame by frame, counter clock wise to view I frame playback.	

Note:

All the operations here (such as playback speed, channel, time and progress) have relationship with hardware version. Some series DVRs do not support some functions or playback speeds.

4.3.3 Calendar

Click calendar icon in Figure 4-10, system pops up calendar for your reference.

Highlighted date means that there are record files in that day. You can click blue date to view file list.

In Figure 4-11, there are video files in March 13th and 14th. Double click date to view file list.

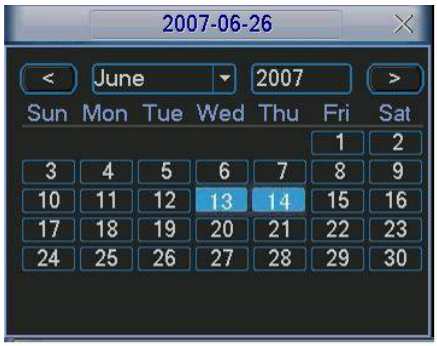


Figure 4-11

4.4 Record Setup (Schedule)

When the system boots up, it is in default 24-hour regular mode. You can set record type and time in schedule interface.

4.4.1 Schedule Menu

In the main menu, from setting to schedule, you can go to schedule menu. See Figure 4-12.

There are three record types: R-Regular, MD-Motion detection, A- Alarm. In some series, system also supports C-Card)

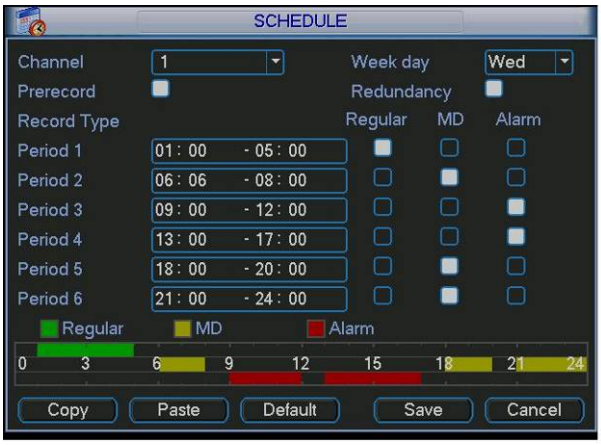


Figure 4-12

4.4.2 Basic Operation

There are totally six periods. See Figure 4-12.

- Channel: Please select the channel number first. You can select “all” if you want to set for the whole channels.
- Week day: There are eight options: ranges from Saturday to Sunday and all.
- Redundancy: System supports redundancy backup function. You can highlight Redundancy button to activate this function. Please note, before enable this function, please set at least one HDD as redundant. Refer to the manual for detailed information.
- Prerecord: System supports prerecord function. The previous one to three seconds video before alarm occurs can be included in recorded video.
- Record types: There are three types: regular, motion detection (MD) and Alarm.

Please highlight icon to select the corresponding function. After all the setups please click save button, system goes back to the previous menu.
At the bottom of the menu, there is a color bar for your reference. Green stands for regular recording, yellow stands for motion detection and red stands for alarm recording.

4.4.1.1 Quick Setup

This function allows you to copy one channel setup to another. After setting in channel 1, you can click paste button and turn to channel 2 and then click copy button. You can finish setting for one channel and then click save button or you can finish all setup and then click save button to memorize all the settings.

4.4.1.2 Redundancy

Redundancy function allows you to memorize record file in several disks. These files are created, packaged and closed simultaneously. When there is file damage occurred in one disk, there is a spare one in the other disk. You can use this function to maintain data reliability and safety.
In the main menu, from Setting to Schedule, you can highlight redundancy button to enable this function. See Figure 4-12.
In the main menu, from Advanced to HDD management, you can set one or more disk(s) as redundant. You can select from the dropdown list. See Figure 4-13.
System auto overwrites old files once hard disk is full.
Please note only read/write disk or read-only disk can backup file and support file search function, so you need to set at least one read-write disk otherwise you can not record video.

Note:

About redundancy setup please note:

- If current channel is not recording, current setup gets activated when the channel begin recording the next time.
- If current channel is recording now, current setup will get activated right away, the current file will be packet and form a file, then system begins recording as you have just set.

After all the setups please click save button, system goes back to the previous menu.

Figure 4-13

Playback or search in the redundant disk.

There are two ways for you to playback or search in the redundant disk.

- Set redundant disk(s) as read-only disk or read-write disk (Main menu->Advanced->HDD management). See Figure 4-13.System needs to reboot to get setup activated. Now you can search or playback file in redundant disk.
- Dismantle the disk and play it in another PC.

4.5 Motion Detect

4.5.1 Go to Motion Detect Menu

In the main menu, from Setting to Detect, you can see motion detect interface. See Figure 4-14.

4.5.2 Motion Detect

Detection menu is shown as below. See Figure 4-14.

- Channel: select the channel you want to implement motion detection.
- Type: in the dropdown list, select motion detection item.
- Record channel: select the channel to activate recording function once alarm occurred. Please make sure you have set MD record in encode interface(Main Menu->Setting->Schedule) and schedule record in manual record interface(Main Menu->Advanced->Manual Record)
- Enable tour: Here is for you to activate tour between different cameras.
- Latch: when motion detection complete, system auto delays detecting for a specified time. The value ranges from 10-300(Unit: second)
- PTZ preset: Click set button, the interface is shown as in Figure 4-15.Here you can set preset for one or more channels.
- Region: click “select” button to set motion detection region. There are 396 (PAL) /330(NTSC) small zones. See Figure 4-16.
- Sensitivity: there are six levels. The six-level is of the highest sensitivity.
- Alarm output: when alarm occurred, system enables peripheral alarm devices.
- Show message: System pops up message in the screen to alert you once alarm occurred.

Please highlight icon to select the corresponding function. After all the setups please click save button, system goes back to the previous menu.
Note:
In motion detection mode, you can not use copy/paste to set channel setup since the video in each channel may not be the same.
In Figure 4-15, you can left click mouse and then drag it to set a region for motion detection. Click Fn to switch between deployment and withdraw motion detection. After setting, click enter button to exit.

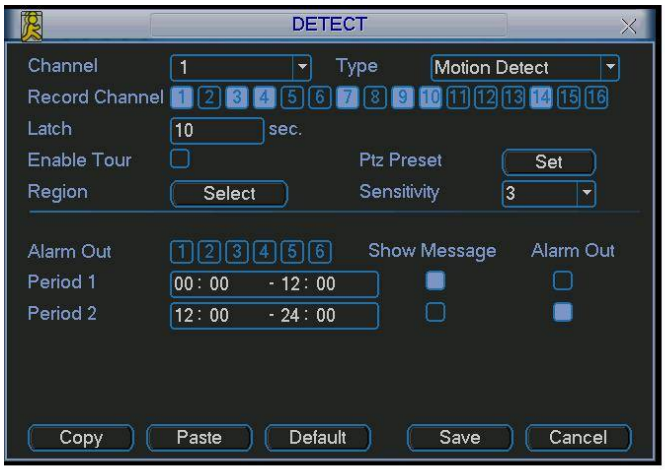


Figure 4-14

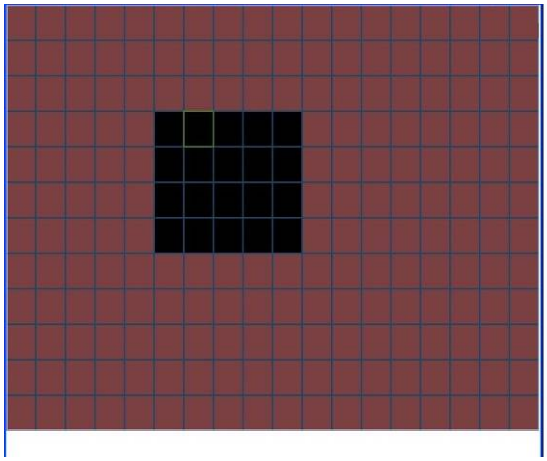


Figure 4-15

Figure 4-16

4.5.3 Video Loss

In Figure 4-14, select video loss in the Type item. You can see the interface is shown as in Figure 4-17.This function allows you to be informed when video loss

phenomenon occurred. You can enable alarm output channel and then enable show message function.

- Channel: select the channel you want to enable lens shading alarm.
- Type: please select video loss.
- Record channel: select the channel to record when video loss occurred.
- Alarm output: activate peripheral alarm device when video loss occurred.
- Enable tour: Here is for you to activate tour between different cameras.
- Latch: when motion detection completes, system auto delays detecting for a specified time. The value ranges from 10-300(Unit: second)
- PTZ preset: Click set button to set preset for one or all channels. See Figure 4-16.
- Period 1/2: It is for you to set two periods (00.00-24.00).
- Alarm output: when video loss occurred, system enables peripheral alarm devices. Please highlight icon to enable this function
- Show message: System pops up message in the screen to alert you once alarm occurred. Please highlight icon to enable this function.

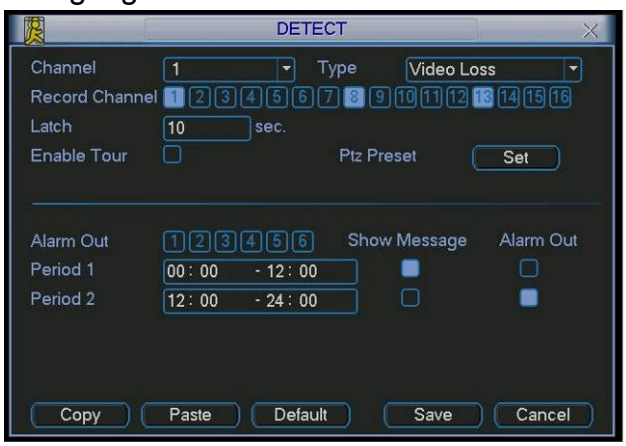


Figure 4-17

4.5.4 Camera Mask Detect

When someone viciously masks lens, the system can alert you to guarantee video continuity. Camera mask detection interface is shown as in Figure 4-18.

- Channel: select the channel you want to enable camera mask detection function.
- Type: please select camera mask detect from the dropdown list.
- Record channel: select the channel to record when camera mask occurred.
- Alarm output: activate peripheral alarm device when camera mask occurred.
- Enable tour: Here is for you to activate tour between different cameras.
- Latch: when motion detection completes, system auto delays detecting for a specified time. The value ranges from 10-300(Unit: second)
- PTZ preset: Click set button to set preset for one or all channels. See Figure 4-16.
- Period 1/2: there are for you to set two periods (00.00-24.00).
- Alarm output: when camera masking occurred, system enables peripheral alarm devices. Please highlight icon to enable this function
- Show message: System pops up message in the screen to alert you once alarm occurred. Please highlight icon to enable this function

Note:

In this interface, copy/paste function is only valid for the same type, which means you can not copy a channel setup in video loss mode to camera mask detect mode.

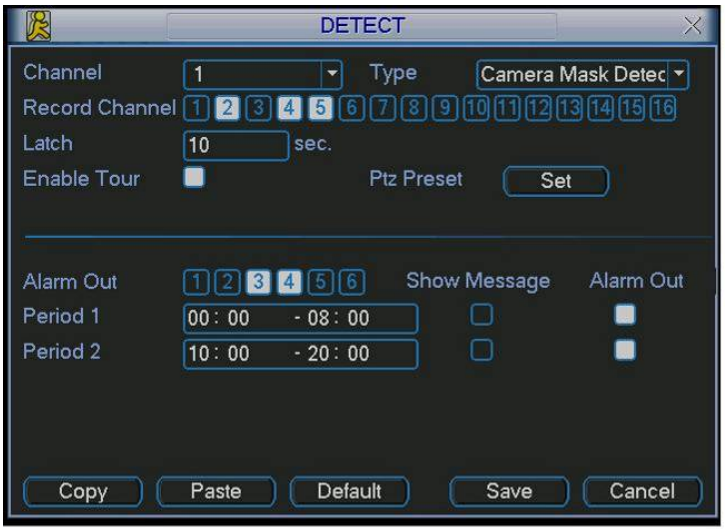


Figure 4-18

4.6 Alarm Setup and Alarm Activation

Before operation, please make sure you have properly connected alarm devices such as buzzer.

4.6.1 Go to alarm setup interface

In the main menu, from Setting to Alarm, you can see alarm setup interface. See Figure 4-19.

4.6.2 Alarm setup

Alarm interface is shown as below. See Figure 4-19.

- Alarm in: here is for you to set channel number.
- Source of alarm: there are two alarm sources: local input or network input.
- Type: normal open or normal close.
- Record channel: you can select proper channel to record alarm video (Multiple choices). At the same time you need to set alarm record in schedule interface (Main Menu->Setting->Schedule) and select schedule record in manual record interface (Main Menu->Advance->Manual Record).
- Latch: Here is for you to set proper delay duration. Value ranges from 10 to 300 seconds. System automatically delays specified seconds in turning off alarm and activated output after external alarm cancelled.
- PTZ preset: Here is for you to activate PTZ control.
- Relay out: select proper alarm activation output channel (multiple choices).
- Show message: System pops up message in the screen to alert you once alarm occurred.
- Period 1 and period 2: set proper time and alarm tips.

Please highlight icon to select the corresponding function. After all the setups please click save button, system goes back to the previous menu.

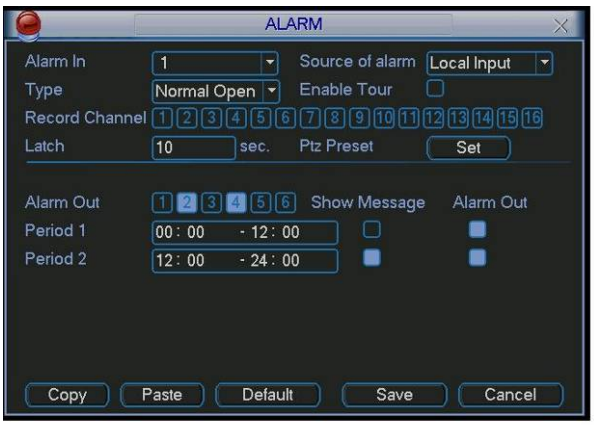


Figure 4-19

4.7 Backup

Click backup icon in the main menu, there are two function items: detect device and backup files.

4.7.1 Detect Device

Here is for you to view devices information. See Figure 4-20.

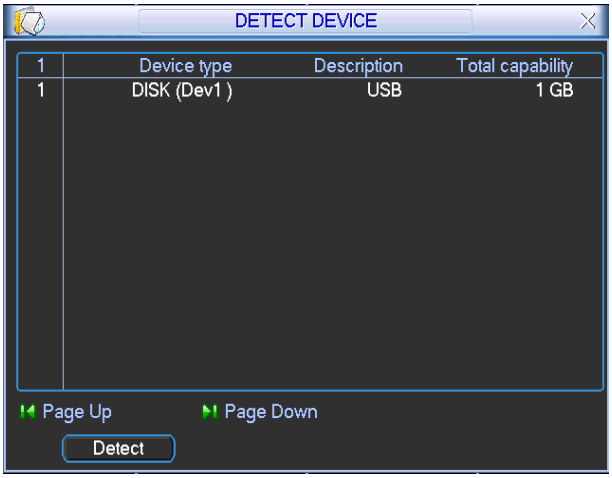


Figure 4-20

4.7.1 Backup

Select backup device and then channel, file start time and end time.

Click add button, system begins search. All matched files are listed below. System automatically calculates the capacity needed and remained. See Figure 4-21.

system only backup files with a √ before channel name. You can use Fn or cancel button to delete √ after file serial number.

Click backup button, you can backup selected files. There is a process bar for you reference.

When the system completes backup, you can see a dialogue box prompting successful backup.

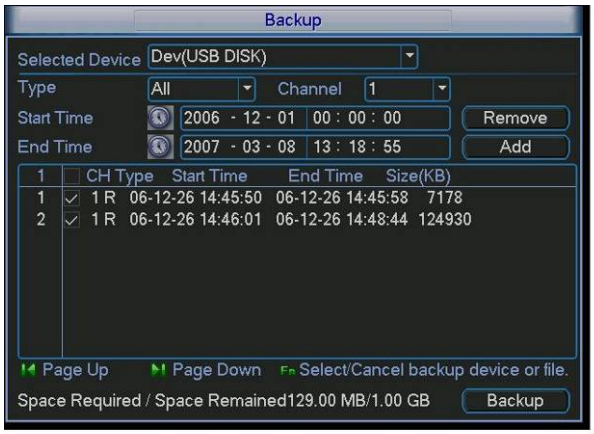

Backup
Selected Device Dev(USB DISK)
Type All Channel 1
Start Time 2006 - 12 - 01 00 : 00 : 00 Remove
End Time 2007 - 03 - 08 13 : 18 : 55 Add
1 CH Type Start Time End Time Size(KB)
1 1 R 06-12-26 14:45:50 06-12-26 14:45:58 7178
2 1 R 06-12-26 14:46:01 06-12-26 14:48:44 124930
Page Up Page Down Select/Cancel backup device or file.
Space Required / Space Remained129.00 MB/1.00 GB Backup

Figure 4-21

Click backup button, system begins burning. At the same time, the backup button becomes stop button. You can view the remaining time and process bar at the left bottom. See Figure 4-22.

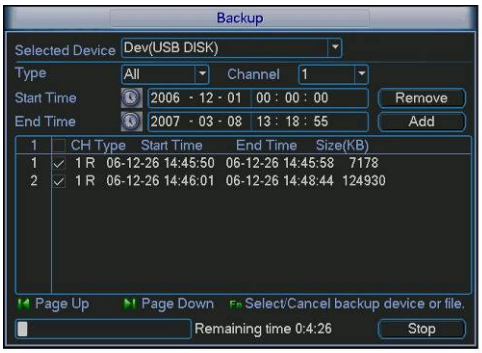

Backup
Selected Device Dev(USB DISK)
Type All Channel 1
Start Time 2006 - 12 - 01 00 : 00 : 00 Remove
End Time 2007 - 03 - 08 13 : 18 : 55 Add
1 CH Type Start Time End Time Size(KB)
1 1 R 06-12-26 14:45:50 06-12-26 14:45:58 7178
2 1 R 06-12-26 14:46:01 06-12-26 14:48:44 124930
Page Up Page Down Select/Cancel backup device or file.
Remaining time 0:4:26 Stop

Figure 4-22

Tips:

During backup process, you can click ESC to exit current interface; but the system will not terminate backup process.

Note:

When you click stop button during the burning process, there are two conditions for different devices:

- For CD/DVD burner device, the stop function becomes activated immediately and there is no data in the burner.
- For USB device, system can backup the data before you click stop button. For example, if there is a file of 10 minutes, when you click stop after five minutes backup, system only save the previous 5-minute data in the device.

The file name format usually is: SN_CH+channel number+time Y+M+D+H+M+S. In the file name, the YDM format is the same as you set in general interface. (Main Menu ->Setting ->General).You can visit our website to view listed CD-ROM type.

4.8 PTZ Control and Color Setup

Note: All the operation here is based on PELCO protocols. For other protocols, there might be a little difference.

4.8.1 Cable Connection

Please follow the procedures below to go on cable connection

- Connect the dome RS485 port to DVR 485 port..
- Connect dome video output cable to DVR video input port.
- Connect power adapter to the dome.

4.8.2 PTZ Setup

Note: The camera video should be in the current screen. Before setup, please check the following connections are right:

- PTZ and decoder connection is right. Decoder address setup is right.
- Decoder A (B) line connects with DVR A (B) line.

Boot up the DVR, input user name and password.

In the main menu, click setting, and then click Pan/Tilt Control button. The interface is shown as in Figure 4-23. Here you can set the following items:

- Channel: select the current camera channel.
- Protocol: select corresponding PTZ protocol (such as Pelco-D)
- Address: default address is 1.
- Baud rate: select corresponding baud rate. Default value is 9600.
- Data bits: select corresponding data bits. Default value is 8.
- Stop bits: select corresponding stop bits. Default value is 1.
- Parity: there are three options: odd/even/none. Default setup is none.

Figure 4-23

After all the setting please click save button.

In one window display mode, right click mouse (click “Fn” Button in the front panel or click “Fn” key in the remote control). The interface is shown as in Figure 4-24.

Figure 4-24

Click Pan/Tilt/Zoom, the interface is shown as below. See Figure 4-25.
Here you can set the following items:

- Step: value ranges fro 1 to 8.
- Zoom
- Focus
- Iris

Click icon and to adjust zoom, focus and iris.

Figure 4-25

In Figure 4-25, please click direction arrows (See Figure 4-26) to adjust PTZ position. There are totally 8 direction arrows.

Figure 4-26

4.8.3 3D Intelligent Positioning Key

In the middle of the eight direction arrows, there is a 3D intelligent positioning key. See Figure 4-27.
Click this key, system goes back to the single screen mode. Drag the mouse in the screen to adjust section size. It can realize PTZ automatically.

Figure 4-27

Here is a sheet for you reference.

Name	Function key	function	Shortcut key	Function key	function	Shortcut Key
Zoom		Near	▶		Far	▶▶
Focus		Near	◀		Far	▶
Iris		close	II ◀		Open	▶ II

4.9 Preset/ Patrol/Pattern/Scan

In Figure 4-25, click the “set” button. The interface is shown as below. See Figure 4-28.

Here you can set the following items:

- Preset
- Patrol(Tour)
- Pattern
- Border

Figure 4-28

In Figure 4-25, click page switch button, the interface is shown as in Figure 4-29.

Here you can activate the following functions:

- Preset
- Patrol(Tour)
- Pattern
- Aux on
- Aux off
- Auto scan
- Auto pan
- Light on

Figure 4-29

Note: The following setups are usually operated in the Figure 4-25,Figure 4-28 and Figure 4-29 .

4.9.1Preset Setup

In Figure 4-25, use eight direction arrows to adjust camera to the proper position.
In Figure 4-28, click preset button and input preset number. The interface is shown as in Figure 4-30.
Now you can add this preset to one patrol (tour).

Figure 4-30

4.9.2 Activate Preset

In Figure 4-29, please input preset number in the No. blank, and click preset button.

4.9.3 Patrol Setup (Tour setup)

In Figure 4-28, click patrol button. The interface is shown as in Figure 4-31.Input preset number and add this preset to a patrol (tour). For each patrol (tour), you can input max 80 presets.

Figure 4-31

4.9.4 Activate Patrol (tour)

In Figure 4-28, input patrol (tour) number in the No. blank and click patrol button

4.9.5 Pattern Setup

In Figure 4-28, click pattern button and then click “begin” button. The interface is shown as in Figure 4-32. Then you can go to Figure 4-25 to modify zoom, focus, and iris.
Go back to Figure 4-32 and click “end” button. You can memorize all these operations as pattern 1.

Figure 4-32

4.9.6 Activate Pattern Function

In Figure 4-29, input mode value in the No. blank, and click pattern button.

4.9.7 Auto Scan Setup

In Figure 4-28, click border button. The interface is shown as in Figure 4-23.
Please go to Figure 4-25, use direction arrows to select camera left limit
Then please go to Figure 4-33 and click left limit button
Repeat the above procedures to set right limit.

Figure 4-33

4.9.8 Activate Auto Scan

In Figure 4-29, click “Auto Scan” button, the system begins auto scan. Correspondingly, the auto scan button changes to stop button. Click stop button to terminate scan operation.

4.10 Dome Menu Control

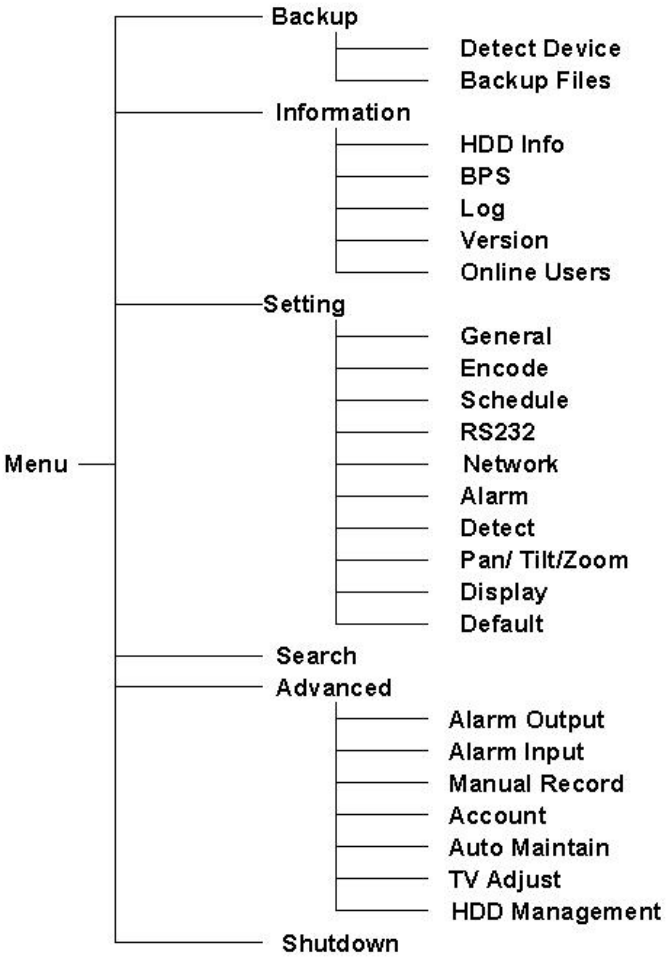
In Figure 4-29, click page switch button, the interface is shown as below. See Figure 4-34.
Click menu to enter dome menu. The direction arrows here are to control dome menu. Click page switch button, system goes back to Figure 4-25

Figure 4-34

5 Understanding of Menu Operations and Controls

5.1 Menu Tree

This series DVR menu tree is shown as below.



5.2 Main Menu

When you login, the system main menu shows as below. See Figure 5-1 . There are totally six icons: search, Information, setting, backup, advanced and shutdown. Move the cursor to highlight the icon, then double click mouse to enter the sub-menu.

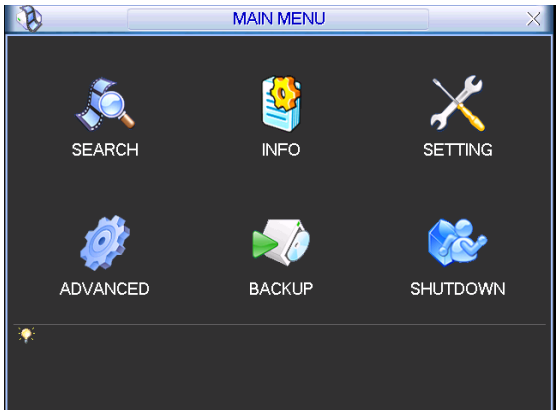


Figure 5-1

5.3 Setting

In main menu, highlight setting icon and double click mouse. System setting interface is shown as below. See Figure 5-2.

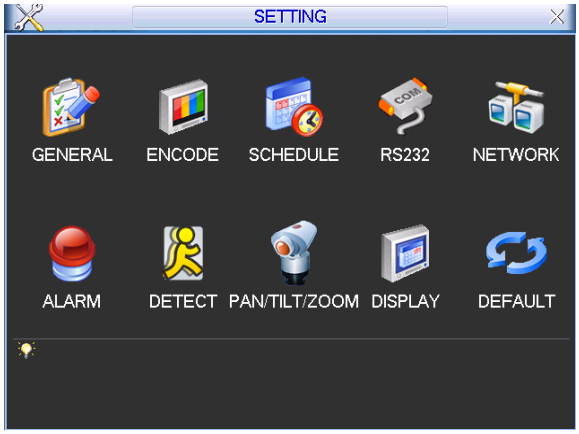


Figure 5-2

5.3.1 General

General setting includes the following items. See Figure 5-3.

- System time: here is for you to set system time
- Date format: there are three types: YYYYY-MM-DD: MM-DD-YYYYY or DD-MM-YYYY.
- Date separator: there are three denotations to separate date: dot, beeline and solidus.
- Time format: there are two types: 24-hour mode or 12-hour mode.
- Language: system supports various languages: Chinese (simplified), Chinese (Traditional), English, Italian, Japanese, French, Spanish (All languages listed here are optional. Slight difference maybe found in various series.)
- HDD full: Here is for you to select working mode when hard disk is full. There are two options: stop recording or rewrite.
- Pack duration: Here is for you to specify record duration. Default value is 60 minutes.

- DVR No: when you are using one remote control to control several DVRs, you can give a name to each DVR for your management.
- Video standard: There are two formats: NTSC and PAL.
- Auto logout: Here is for you to set auto logout interval once login user remains inactive for a specified time. Value ranges from 0 to 60 minutes.
- Output mode:there are three options: TV/VGA/AUTO

Note: since system time is very important, do not modify time casually unless there is a must.

After all the setups please click save button, system goes back to the previous menu.

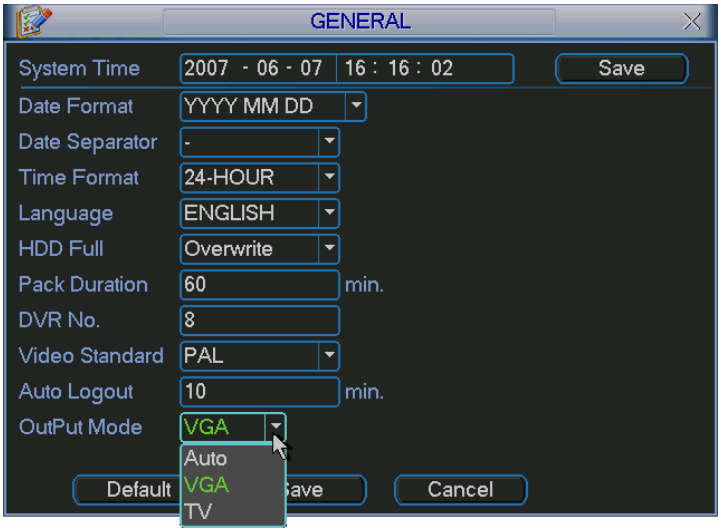


Figure 5-3

5.3.2 Encode

Encode setting includes the following items. See Figure 5-4.

- Channel: Select the channel you want.
- Compression: system supports H.264.
- Resolution: System supports various resolutions, you can select from the dropdown list. For this series, we can support CIF and D1.
- Bit rate: system supports two types: CBR and VBR.
- Quality: There are six levels ranging from 1 to 6. Level six is the highest image quality.
- Frame rate: there are six levels: 1 f/s,2f/s,3f/s, 6f/s,12f/s,25f/s. (Some series DVRs only support PAL 25f/s)
- Enable audio: you can turn on or off the audio.
- Cover area (Privacy mask): Here is for you to set window blanking section. You can drag you mouse to set proper section size.
- Time display: You can select system displays time or not.
- Channel display: You can select system displays channel number or not.

System default setup is:

- Channel:1
- Compression:H.264
- Resolution: CIF
- Bit rate: CBR
- Quality: 4

- Frame rate: 25f/s

Please highlight icon to select the corresponding function.

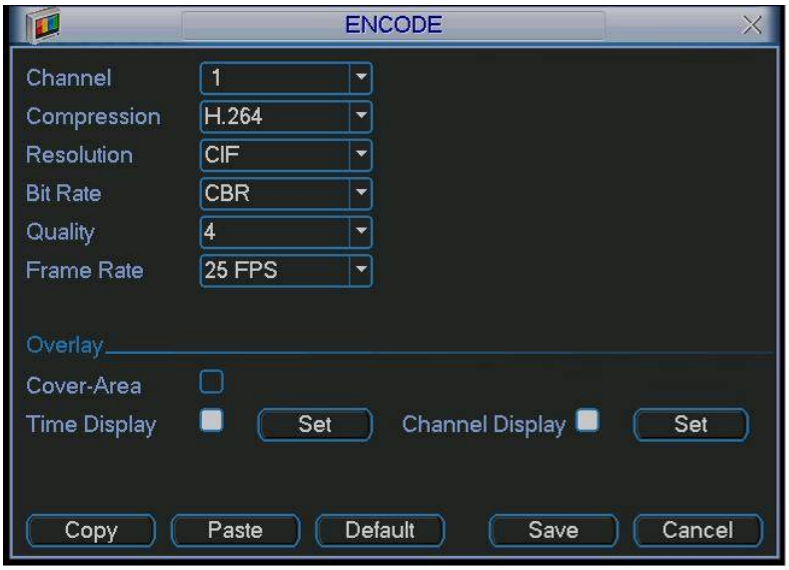


Figure 5-4

5.3.3 Schedule

Please refer to chapter 4.4 schedule.

5.3.4 RS232

RS232 interface is shown as below. Here are five items. See Figure 5-5.

- Function: There are various devices for you to select.
- Baud rate: You can select proper baud rate.
- Data bit: You can select proper data bit.
- Stop bit: There are three values: 1/1.5/2.
- Parity: there are three choices: none/odd/even.

After all the setups please click save button, system goes back to the previous menu

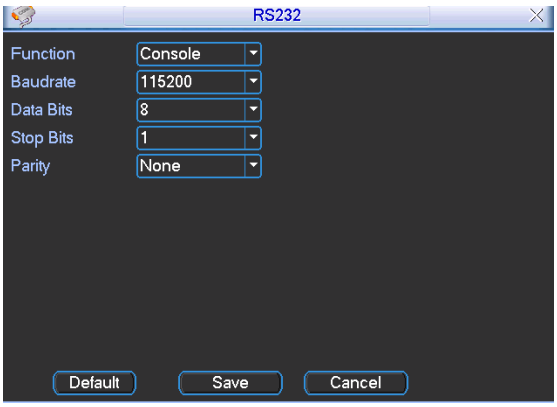


Figure 5-5

5.3.5 Network

Here is for you to input network information. See Figure 5-6.

- IP address

- Subnet mask
- Gateway
- Service port: Default value is 37777. (System server port 37778 is reserved for network UDP use.)
- HTTP port: Default value is 80
- Protocol: You can select proper protocol from the dropdown list.
- Max connection: support maximal 10 users.
- Properties: There are three options for you: FTP/NTP/Alarm center. You can select corresponding ways and then click properties button to go to setup interface.

- Authorization: Click authorization button please highlight icon to enable IP authentication function. When you enable this function, only IP in the list can login this DVR. See Figure 5-7.

After all the setups please click save button, system goes back to the previous menu.

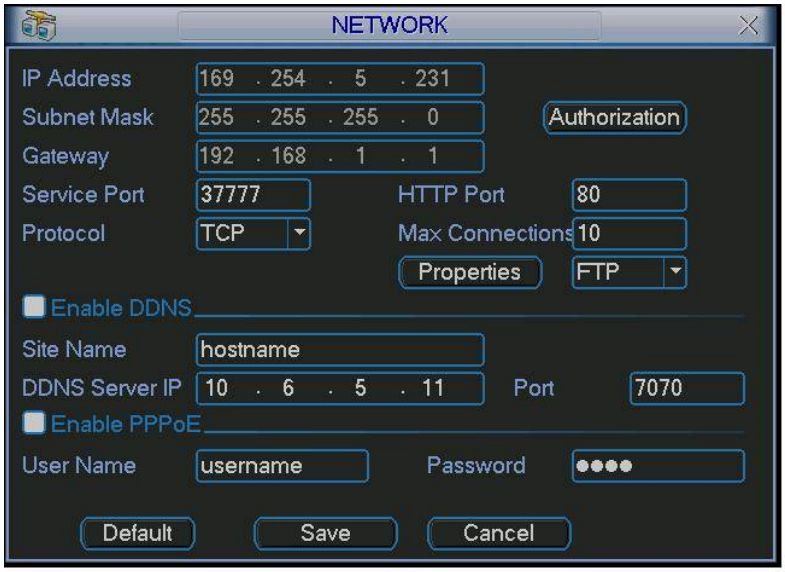


Figure 5-6

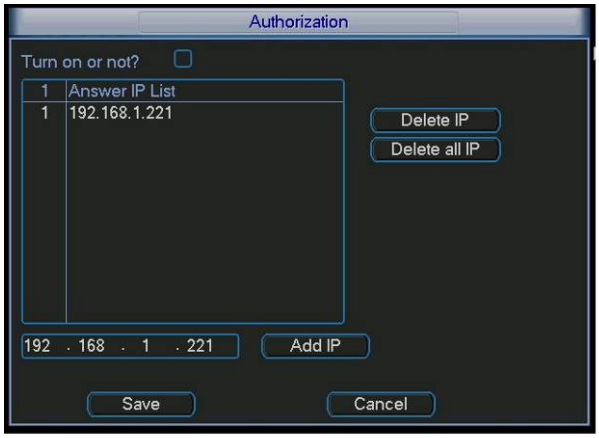


Figure 5-7

5.3.5.1 PPPoE Connection

Enable PPPoE function and then input “PPPoE name” and “PPPoE password” you get from your ISP (Internet service provider).
Click save button, you need to restart to activate your configuration.
After rebooting, IP camera will connect to internet automatically. The IP in the PPPoE is the dynamic value.

5.3.5.2 Web visit via PPPoE

There are two ways.

a. visit via current IP

After DVR connected with Internet by PPPoE, please get your device’s current IP in Figure 5-6. Now you can visit this IP camera via this IP.

b. Visit via DNS

You need a PC of fixed IP in the internet and there is the DDNS software running in this PC. In other words, this PC is a DNS (domain name server).
In network DDNS, input your PPPoE name you get from you IPS and server IP (PC with DDNS) . Click save button and then reboot system.
Click save button, system prompts for rebooting to get all setup activated.
After rebooting, open IE and input as below:
http：//(DDNS server IP)/(virtual directory name)/webtest.htm
e.g.: http：//10.6.2.85/DVR _DDNS/webtest.htm.)
Now you can open DDNSServer web search page.

5.3.5.3 FTP

You need to download or buy FTP service tool (such as Ser-U FTP SERVER) to establish FTP service.
Please install Ser-U FTP SERVER first. From “start” -> “program” -> Serv-U FTP Server -> Serv-U Administator. Now you can set user password and FTP folder.
Please note you need to grant write right to FTP upload user. See Figure 5-8.

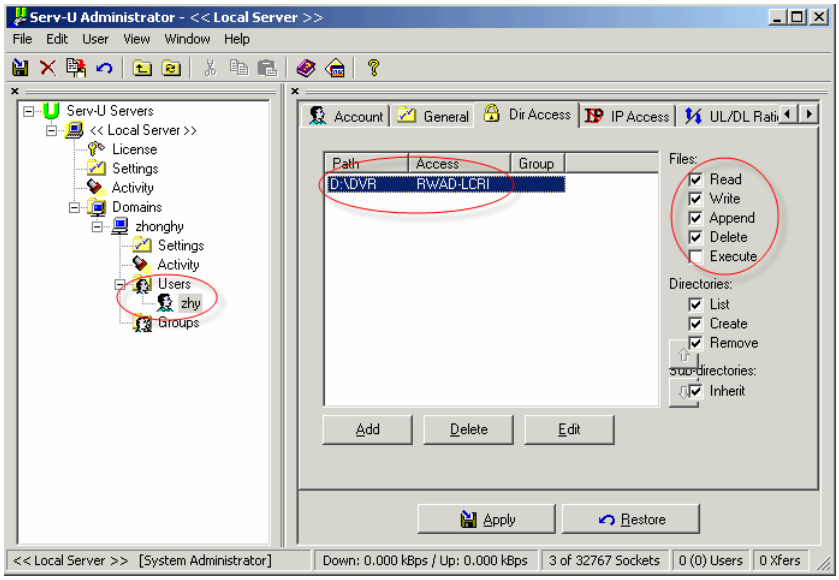


Figure 5-8

You can use a PC or FTP login tool to test setup is right or not.
For example, you can login user ZHY to FTP://10.10.7.7 and then test it can modify or delete folder or not. See Figure 5-9.

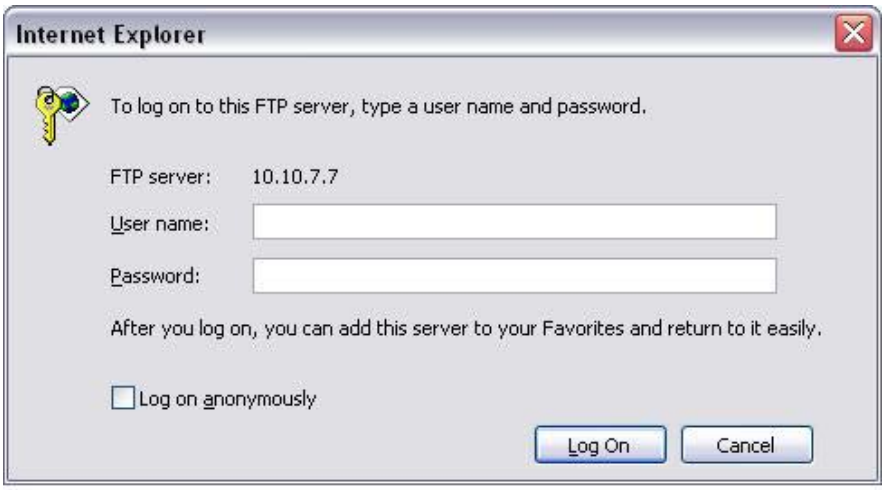

Internet Explorer
To log on to this FTP server, type a user name and password.
FTP server: 10.10.7.7
User name:
Password:
After you log on, you can add this server to your Favorites and return to it easily.
Log on anonymously
Log On
Cancel

Figure 5-9

System also supports upload multiple DVRs to one FTP server. You can create multiple folders under this FTP.
In Figure 5-6, select FTP and then click properties button. You can see the following interface. See Figure 5-10.

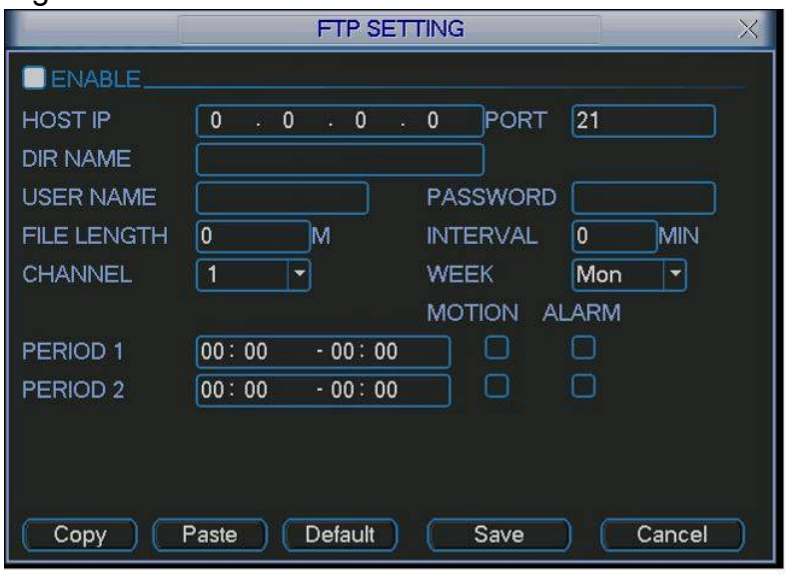


Figure 5-10

Please highlight the icon ☐ in front of Enable to activate FTP function.
Now FTP can upload alarm video and motion detection video. Please note, when you are using this function, please make sure current upload channel is in motion detection or alarm record status and there is video available.
Here you can input FTP server address, port and etc.

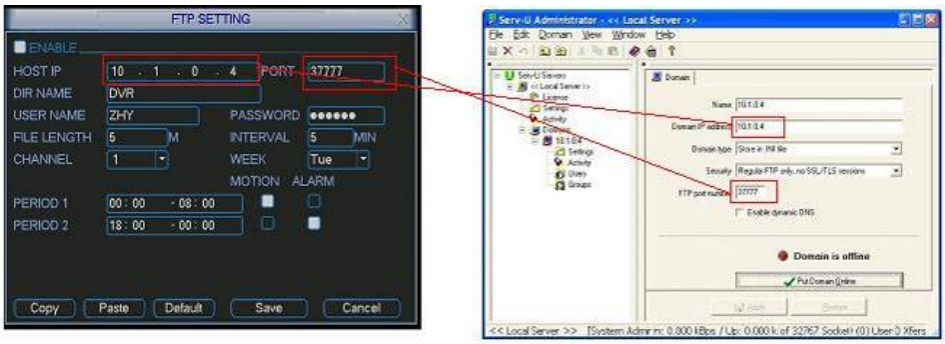


Figure 5-11

- File length: upload file length. When setup is larger than the actual file length, system will upload the whole file. When setup here is smaller than the actual file length, system only uploads the set length and auto ignore the left section.
- Interval: in each channel, system only uploads the first video file in accordance with video type (alarm/motion detection) during the same period. For example, when interval value is 5 minutes, system only uploads the first motion detection or alarm file in each 5-minute.
- When interval value is 0, system uploads all corresponding files.
- Period 1 and period 2: you can set two periods for one each channel.

System file name is shown as in Figure 5-12.

Figure 5-12

5.3.5.4 NTP

You need to install SNTP server (Such as Absolute Time Server) in your PC first. In Windows XP OS, you can use command “net start w32time” to boot up NTP service. In Figure 5-6, select NTP and then click properties button. You can see the following interface. See Figure 5-13.

- Host IP: Input your PC address.
- Port: This series DVR supports TCP transmission only. Port default value is 123.
- Update interval: minimum value is 15(Unit: minute)
- Time zone: select your corresponding time zone here.

Here is a sheet for your time zone setup.

City /Region Name	Time Zone
London	GMT+0
Berlin	GMT+1
Cairo	GMT+2
Moscow	GMT+3
New Deli	GMT+5
Bangkok	GMT+7
Beijing (Hong Kong)	GMT+8

Tokyo	GMT+9
Sydney	GMT+10
Hawaii	GMT-10
Alaska	GMT-9
Pacific Time(P.T)	GMT-8
American Mountain Time(M.T)	GMT-7
American Central Time(C.T)	GMT-6
American Eastern Time(E.T)	GMT-5
Atlantic Time	GMT-4
Brazil	GMT-3
Middle Atlantic Time	GMT-2

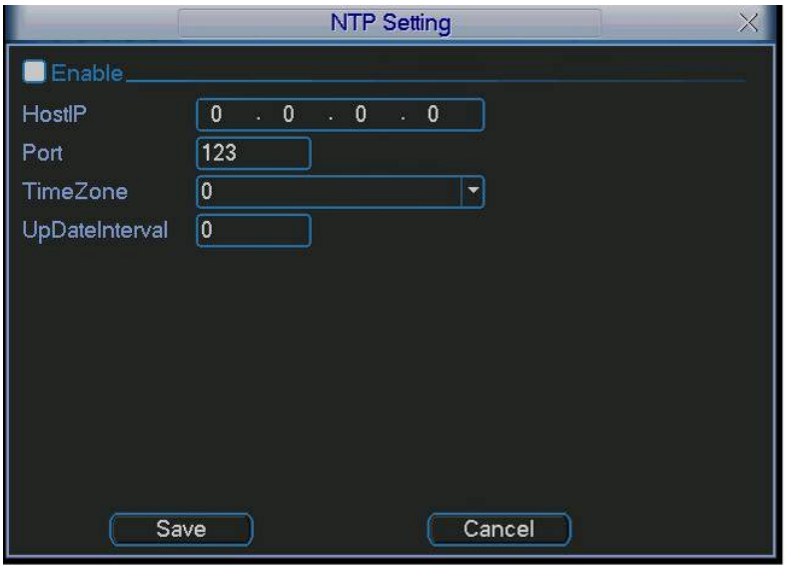


Figure 5-13

5.3.6 Alarm

Please refer to chapter 4.6 Alarm Setup and Activation.

5.3.7 Detect

Please refer to chapter 4.5 Detect.

5.3.8 Pan/Tilt/Zoom

The pan/tilt/zoom setup includes the following items. Please select channel first. See Figure 5-14.

- Protocol: select corresponding PTZ protocol such as PELCO.
- Address: input corresponding PTZ address.
- Baud rate: select baud rate.
- Data bit: select data bit.
- Stop bit: select stop bit.
- Parity: there are three choices: none/odd/even.

After all the setups please click save button, system goes back to the previous menu. For detailed setup, please refer to chapter 4.9 preset/patrol/pattern/scan.

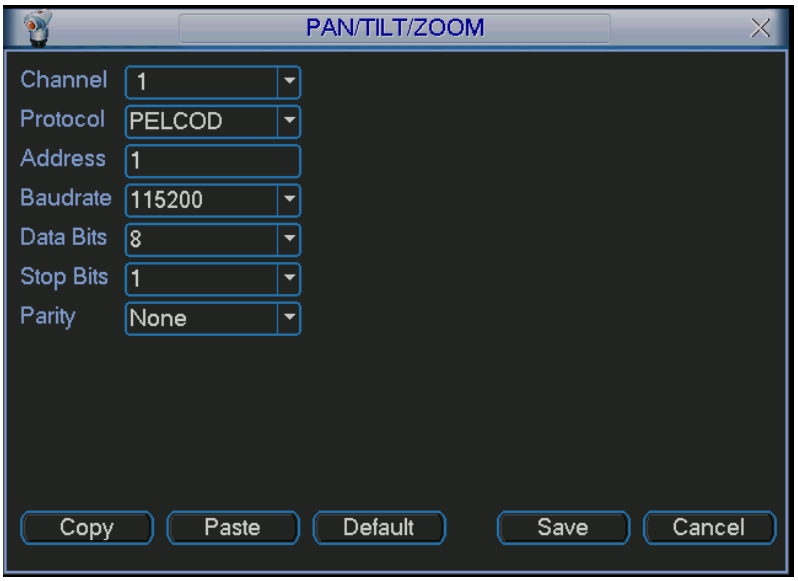


Figure 5-14

5.3.9 Display

Display setup interface is shown as below. See Figure 5-15.

- Transparency: Here is for you to adjust transparency. The value ranges from 128 to 255.
- Channel name: Here is for you to modify channel name. Please note all your modification here only applies to DVR local end. You need to open web or client end to refresh channel name.
- Time display: You can select display time or not.
- Channel display: You can select channel name or not.
- Overlay information: System displays some information in the screen for your reference.
- Enable tour: activate tour function.
- Interval: Input proper interval value here. The value ranges from 5-200 seconds. In tour process, you can use mouse or click Shift to turn on window switch function. Stands for opening switch function, stands for closing switch function.
- View1/4/9/16: System support 1/4/9/16 window tour.

Please highlight icon to select the corresponding function.

After all the setups please click save button, system goes back to the previous menu.

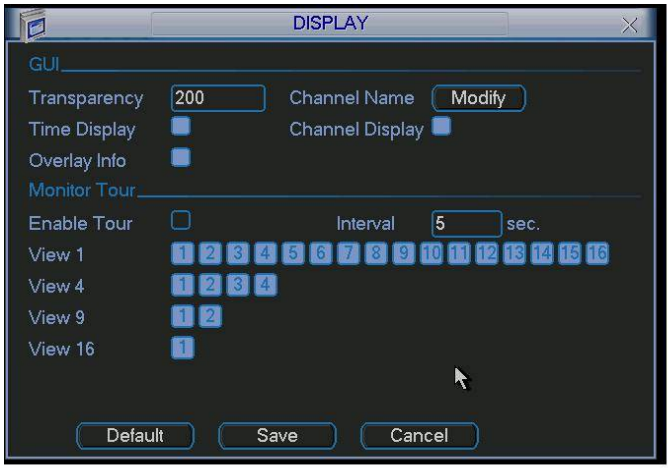


Figure 5-15

5.3.10 Default

Click default icon, system pops up a dialogue box. You can highlight ☐ to restore default factory setup. See Figure 5-16.

- Select all
- General
- Encode
- Schedule
- RS232
- Network
- Alarm
- Detect
- Pan/tilt/zoom
- Display
- Channel name

Please highlight icon ☐ to select the corresponding function.

After all the setups please click save button, system goes back to the previous menu.

Warning!

System menu color, language, time display mode, video format, IP address, user account will not maintain previous setup after default operation!

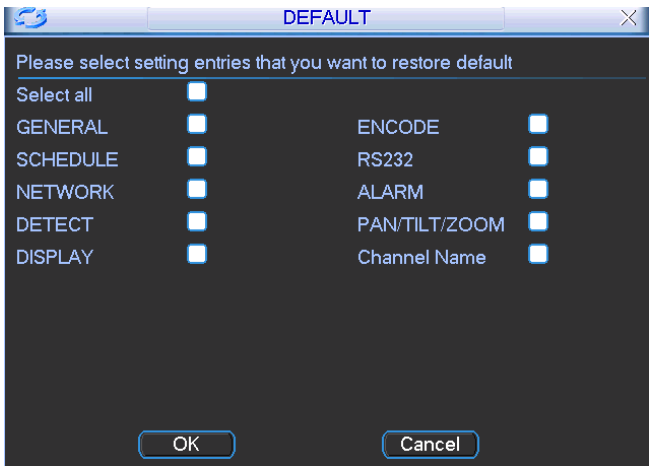


Figure 5-16

5.4 Search

Please refer to chapter 4.3 Search.

5.5 Advanced

Double click advanced icon in the main window, the interface is shown as below. See Figure 5-17. There are totally seven function keys: hard disk management, alarm output, alarm input, manual record, account, auto maintain, and TV adjust.

Figure 5-17

5.5.1 HDD Management

Here is for you to view and implement hard disk management. See Figure 5-18. You can set proper mode for each hard disk from the dropdown list.
When you use redundant backup function, you can set one or more redundant HDD(s).
Please note you need to set at least one read-write disk, otherwise system will not record video. For detailed information you can refer to chapter 4.4 Schedule.
After all the setups please click save button, system needs to reboot to get all the modification activated.

Figure 5-18

Click alarm set button, the interface is shown as below. See Figure 5-19.

Please highlight icon to select the corresponding function.
You can enable one or more alarm setups. The lower limit ranges from 1% to 99%.
Alarm channel number ranges from 1 to 6. Delay value is from 0 to 240 seconds.
Please note when HDD capacity is not full system only alarms once!
After all the setups please click OK button, system goes back to the previous menu

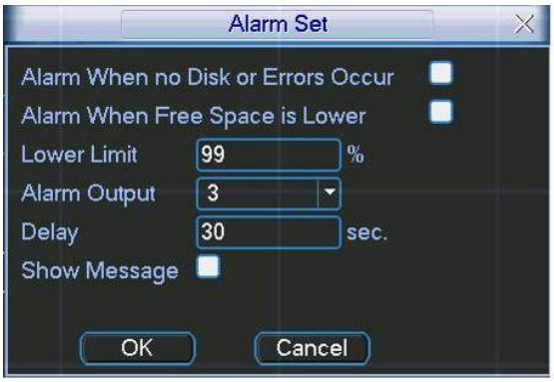


Figure 5-19

5.5.2 Alarm Output

Here is for you to set proper alarm output.

Please highlight icon to select the corresponding alarm output.
After all the setups please click OK button, system goes back to the previous menu. See Figure 5-20.

Figure 5-20

5.5.3 Alarm Input

Here is for you to set alarm input.

Please highlight icon to select the corresponding input channel.
After all the setups please click save button, system goes back to the previous menu. See Figure 5-21.

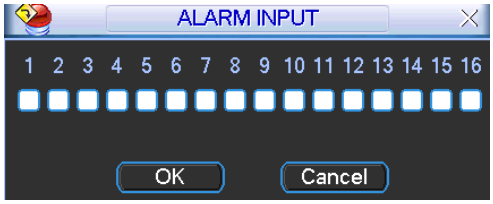


Figure 5-21

5.5.4 Manual Record

Please refer to chapter 4.2.2 manual record.

5.5.5 Account

Here is for you to implement account management. See Figure 5-22. Here you can:

- Add new user
- Modify user
- Add group
- Modify group
- Modify password.

For account management please note:

- System account adopts two-level management: group and user. No limit to group or user amount.
- For group or user management, there are two levels: admin and user.
- The user name and group name can consist of eight bytes. One name can only be used once. There are four default users: admin/888888/666666 and hidden user “default”. Except user 6666, other users have administrator right.
- Hidden user “default” is for system interior use only and can not be deleted. When there is no login user, hidden user “default” automatically login. You can set some rights such as monitor for this user so that you can view some channel view without login.
- One user should belong to one group. User right can not exceed group right.
- About reusable function: this function allows multiple users use the same account to login.

After all the setups please click save button, system goes back to the previous menu.

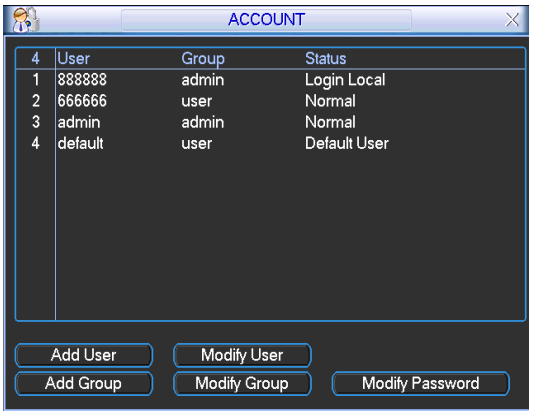


Figure 5-22

5.5.6 Auto Maintain

Here you can set auto-reboot time and auto-delete old files setup. See Figure 5-23.
You can select proper setup from dropdown list.
After all the setups please click save button, system goes back to the previous menu.

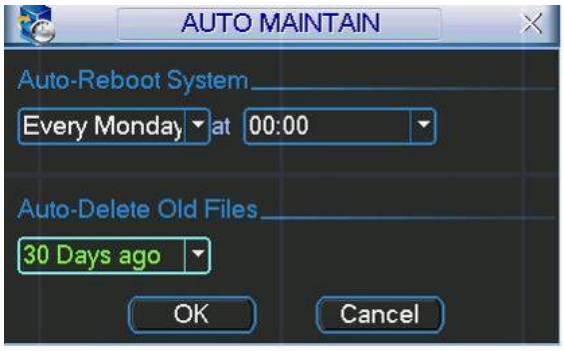


Figure 5-23

5.5.7 TV Adjust

Here is for you to adjust TV output setup. See Figure 5-24.
Please drag slide bar to adjust each item.
After all the setups please click OK button, system goes back to the previous menu.

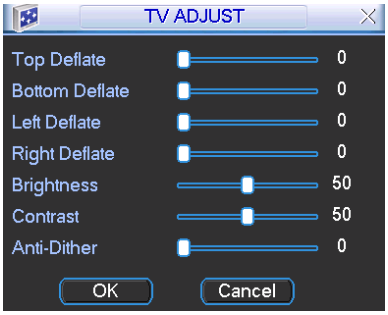


Figure 5-24

5.5.8 Video Matrix (For DVR 1604LNH-S Series Only)

Some series DVR have the matrix and loop outputs.

5.5.8.1 Loop outputs

They are just the same with video distributors. There are 16-ch video loop outputs from our DVR. The DVR video output can connect with other devices such as TV walls, analog matrix and so on.

5.5.8.2 Matrix outputs

They are like the small-scale matrix. You can select any camera from our DVR to switch. And the output can also tour between the cameras. So the matrix outputs can be used to build TV walls and tour and display the cameras one by one.

5.5.8.3 Rear Panel Connection

The rear panel is shown as below. See Figure 5-25.

Figure 5-25

5.5.8.4 37-pin cable introduction

There are three colors cable. See Figure 5-26.

- Black: for loop outputs, there are 16-ch loop outputs
- Blue: for matrix outputs, there are 4-ch matrix outputs
- White: for bi-direction talk, one is for audio in and the other is for audio out.

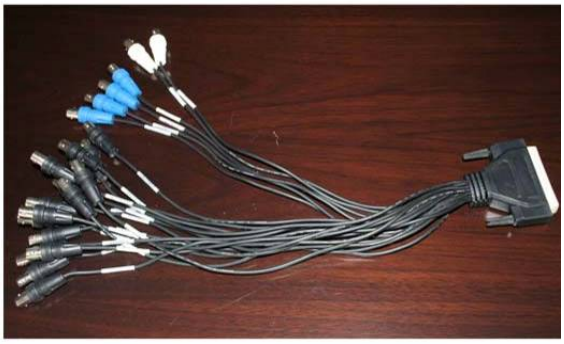


Figure 5-26

5.5.8.5 Matrix setup

5.5.8.5.1 Enter the Menu of Video Matrix

In the menu, from “Advanced” to “Video Matrix”. See Figure 5-27.

Figure 5-27

5.5.8.5.2 Right mouse menu

In one-window display mode, right click mouse to select “Video Matrix”. See Figure 5-28.

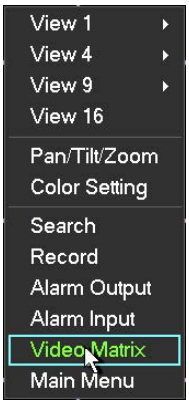


Figure 5-28

5.5.8.6 Video Matrix Interface and Application

LNH-S series support 1-channel matrix outputs. The video matrix interface is shown as in Figure 5-29.

You can set for each channel. The function consists of two types.

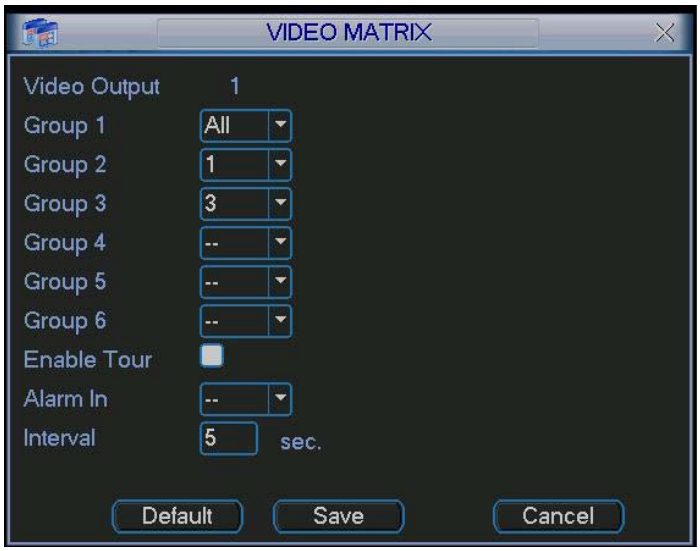


Figure 5-29

5.5.8.6.1 Single Tour

Please enable tour function. Then set interval time and select corresponding cameras. You can select “ALL” to tour between all channels.

Note:

- ”- -“means that there is no alarm activation tour.

5.5.8.6.2 Alarm Tour

Select the “alarm in” channel number from the dropdown list. If there is an alarm signal from the channel selected, the matrix output will go to tour as you set in the “Alarm” setting (Main Menu->Setting->Alarm). See Figure 5-30.

Alarm tour has higher priority than single tour during this period, the single tour will stop. After alarm activation tour, the matrix output will continue single tour.

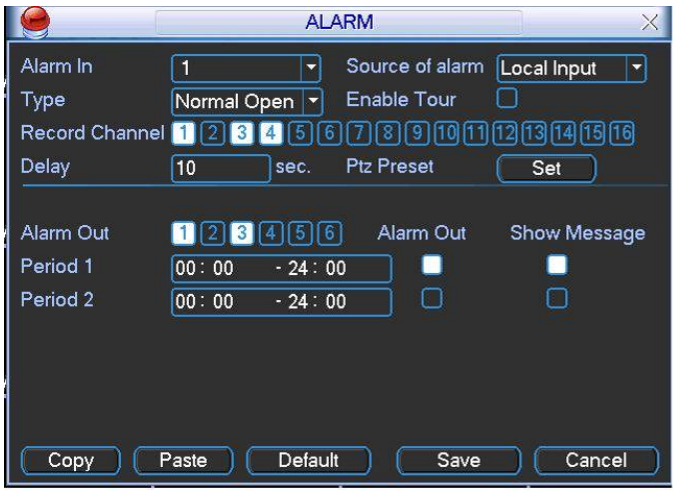


Figure 5-30

5.5.8.7 Examples

5.5.8.7.1 Example one

In Figure 5-31, matrix outputs"1", "3", "4" tour between all cameras of the DVR. Matrix output 2 tours between "CAM1, CAM6 and CAM7" of the DVR. The interval is five seconds.

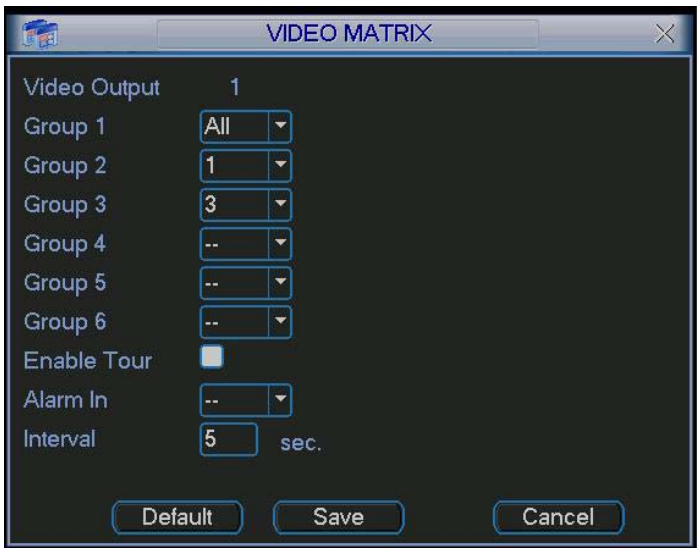


Figure 5-31

5.5.8.7.2 Example two

In Figure 5-32, when alarm occurs in channel one, the activated matrix output one begins touring between CAM1, CAM3 and CAM4 of the DVR until alarm activation tour stops.

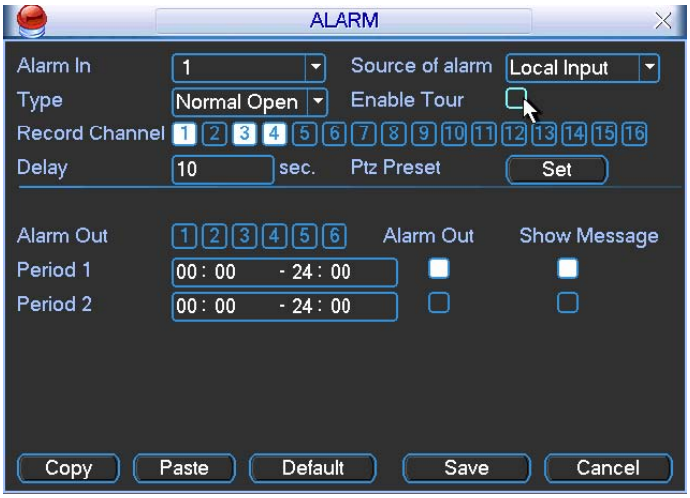


Figure 5-32

5.6 Information

Here is for you to view system information. There are totally five items: HDD (hard disk information), BPS (data stream statistics), Log and version, and online user. See Figure 5-33.

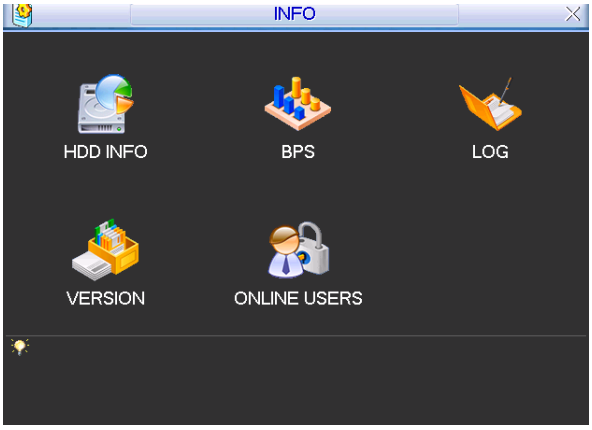


Figure 5-33

5.6.1 HDD Information

Here is to list hard disk type, total space, free space, video start time and status. See Figure 5-34.

Note:

Please remove the broken hard disk before you add a new one.

Once there is a hard disk confliction, please check hard disk time and system time is the same or not. Please go to setting then general to modify system time. At last, reboot the system to solve this problem.

If disk is damaged, system shows as “?”

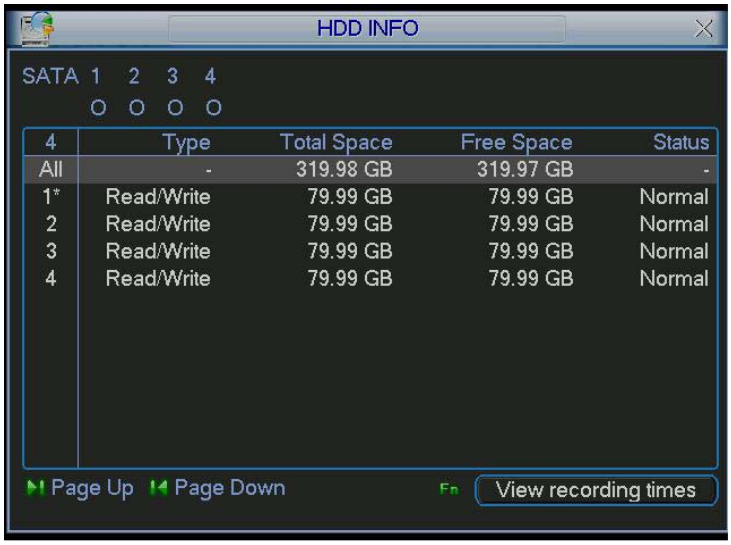

HDD INFO
SATA 1 2 3 4
O O O O
4 Type Total Space Free Space Status
All - 319.98 GB 319.97 GB -
1* Read/Write 79.99 GB 79.99 GB Normal
2 Read/Write 79.99 GB 79.99 GB Normal
3 Read/Write 79.99 GB 79.99 GB Normal
4 Read/Write 79.99 GB 79.99 GB Normal
Page Up
Page Down
Fn
View recording times

Figure 5-34

5.6.2 BPS

Here is for you to view current video data stream (KB/s) and occupied hard disk storage (MB/h). See Figure 5-35.

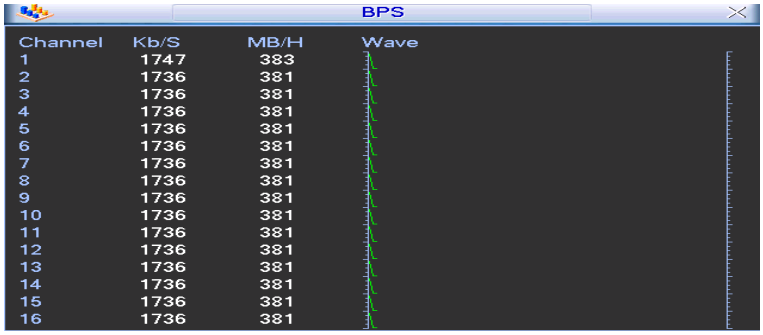


Figure 5-35

5.6.3 Log

Here is for you to view system log file. System lists the following information. See Figure 5-36.

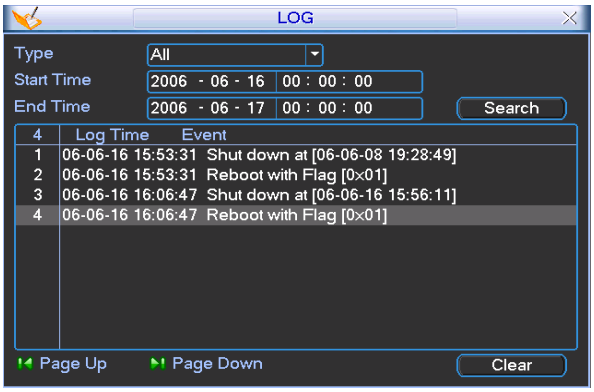

LOG
Type All
Start Time 2006 - 06 - 16 00 : 00 : 00
End Time 2006 - 06 - 17 00 : 00 : 00
Search
4 Log Time Event
1 06-06-16 15:53:31 Shut down at [06-06-08 19:28:49]
2 06-06-16 15:53:31 Reboot with Flag [0x01]
3 06-06-16 16:06:47 Shut down at [06-06-16 15:56:11]
4 06-06-16 16:06:47 Reboot with Flag [0x01]
Page Up
Page Down
Clear

Figure 5-36

5.6.4 Version

Here is for you to view some version information. See Figure 5-37.

- Channel
- Alarm in
- Alarm out
- System version:
- Baud rate:
- Start upgrade

VERSION
Channels 16
Alarm In 16
Alarm Out 6
System Version 1.28
Build Date 2006-05-24
UPGRADE
If you need to upgrade system now,please insert USB disk,then press the start button to start upgrade.Don't shut down the power during upgrade!
Start

Figure 5-37

5.6.5 Online Users

Here is for you manage online users. See Figure 5-38.

You can disconnect one user or block one user if you have proper system right.

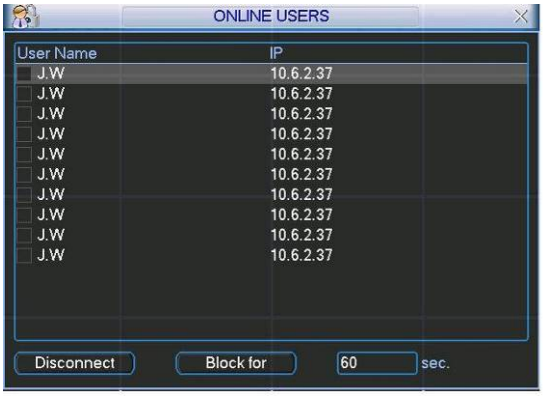


Figure 5-38

5.7 Exit

Double click exit button, system pop up a dialogue box for you to select. See Figure 5-39.

- Logout menu user: log out menu. You need to input password when you login the next time.
- Restart application: reboot DVR.
- Shutdown: system shuts down and turns off power.
- Restart system: system begins rebooting.
- Switch user: you can use another account to log in.

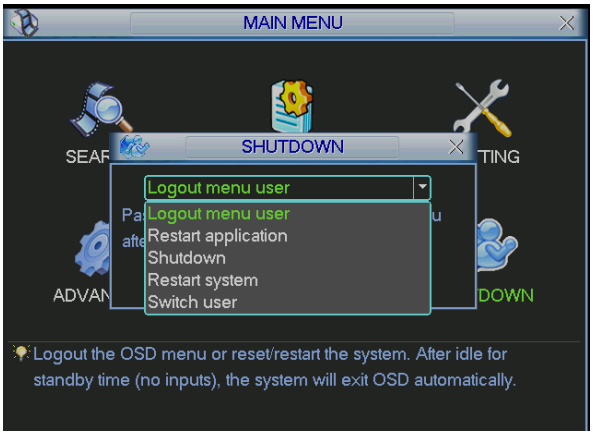

MAIN MENU
SEAF
TING
SHUTDOWN
Logout menu user
Logout menu user
Restart application
Shutdown
Restart system
Switch user
ADVAN
DOWN
Logout the OSD menu or reset/restart the system. After idle for standby time (no inputs), the system will exit OSD automatically.

Figure 5-39

6 About Auxiliary Menu

6.1 Go to Pan/Tilt/Zoom Menu

In the one-window surveillance mode, right click mouse (click “fn” Button in the front panel or click AUX key in the remote control). The interface is shown as below: See Figure 6-1.

Figure 6-1

Click Pan/Tilt/Zoom, the interface is shown as in Figure 6-2.

Here you can set the following items:

- Zoom
- Focus
- Iris

Click icon and to adjust zoom, focus and Iris.

Figure 6-2

In Figure 6-2, please click direction arrows (See Figure 6-3) to adjust PTZ position. There are totally eight direction arrows. (Please note there are only four direction arrows in DVR front panel.)

Figure 6-3

6.1.1 3D Intelligent Positioning Key

In the middle of the eight direction arrows, there is a 3D intelligent positioning key. See Figure 6-4 . Click this button, system goes back to the single screen mode. Drag the mouse in the screen to adjust section size.

Figure 6-4

Here is a sheet for you reference.

Name	Function key	function	Shortcut key	Function key	function	Shortcut key
Zoom		Near	▶		Far	▶▶
Focus		Near	◀		Far	▶
Iris		close	II ◀		Open	▶ II

6.2 Preset /Patrol / Pattern /Border Function

In Figure 6-2 click the set button. The interface is shown as below:
Here you can set the following items:

- Preset
- Patrol
- Pattern
- Border

Figure 6-5

In Figure 6-2, click page switch button, you can see an interface as in Figure 6-6.
Here you can activate the following functions:

- Preset
- Tour(Patrol)
- Pattern
- Auto scan
- Auto pan
- Flip
- Page Switch

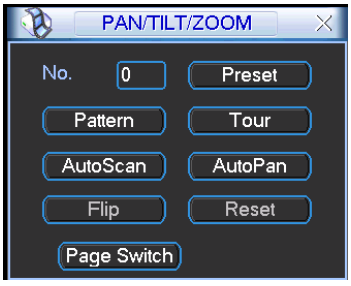


Figure 6-6

6.2.1 Preset Setup

Note: The following setups are usually operated in the Figure 6-2, Figure 6-5 and Figure 6-6.

In Figure 6-2, use eight direction arrows to adjust camera to the proper position.

In Figure 6-5, click preset button and input preset number. The interface is shown as in Figure 6-7.

Add this preset to one patrol number

Figure 6-7

6.2.2 Activate Preset

In Figure 6-6 please input preset number in the No. blank, and click preset button.

6.2.3 Patrol Setup

In Figure 6-5, click patrol button. The interface is shown as in Figure 6-8.

Input preset number and then add this preset to one patrol.

Figure 6-8

6.2.4 Activate Patrol

In Figure 6-6, input patrol number in the No. blank and click patrol button

6.2.5 Pattern Setup

In Figure 6-5, click pattern button and then click begin button. The interface shows like Figure 6-9.

Please go to Figure 6-2 to modify zoom, focus, and iris. Go back to Figure 6-9 and click end button.

You can memorize all these setups as pattern 1.

Figure 6-9

6.2.6 Activate Pattern Function

In Figure 6-6 input mode value in the No. blank, and click pattern button.

6.2.7 Border Setup

In Figure 6-5, click border button. The interface is shown as in Figure 6-10.
Please go to Figure 6-2, use direction arrows to select camera left limit, and then please go to Figure 6-10 and click left limit button
Repeat the above procedures to set right limit.

Figure 6-10

6.2.8 Activate Border Function

In Figure 6-6, click auto scan button, the system begins auto scan. Correspondingly, the auto scan button changes to stop button.
Click stop button to terminate scan operation.

6.2.9 Flip

In Figure 6-6, click page switch button, you can see an interface is shown as below. See Figure 6-11. Here you can set auxiliary function.
Click page switch button again, system goes back to Figure 6-2.

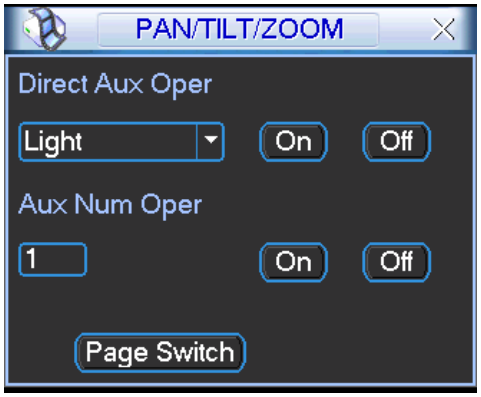


Figure 6-11

7 WEB CLIENT OPERATION

Please note, all the operation here is taking 16-ch DVR as an example.
There might be slightly difference in the interface due to different series.

7.1 Network Connection

Before web client operation, please check the following items:

- Network connection is right
- DVR and PC network setup is right. Please refer to network setup(main menu->setting->network)
- Use order ping ***.***.***.***(* DVR IP address) to check connection is OK or not. Usually the return TTL value should be less than 255.
- System is compatible with WIN VISTA web control right now. But you need to disable user account control function. Double click user account and then disable user account control. After completing setup, please reboot the PC.
- System can automatically download latest web control and the new version can overwrite the previous one.
- If you want to un-install the web control, please run uninstall web.bat to un-install. Please note, before you un-install, please close all web pages, otherwise the un-installation might result in error.

7.2 Login

Open IE and input DVR address in the address column. For example, if your DVR IP is 10.10.3.16, then please input http:// 10.10.3.16 in IE address column. See Figure 7-1

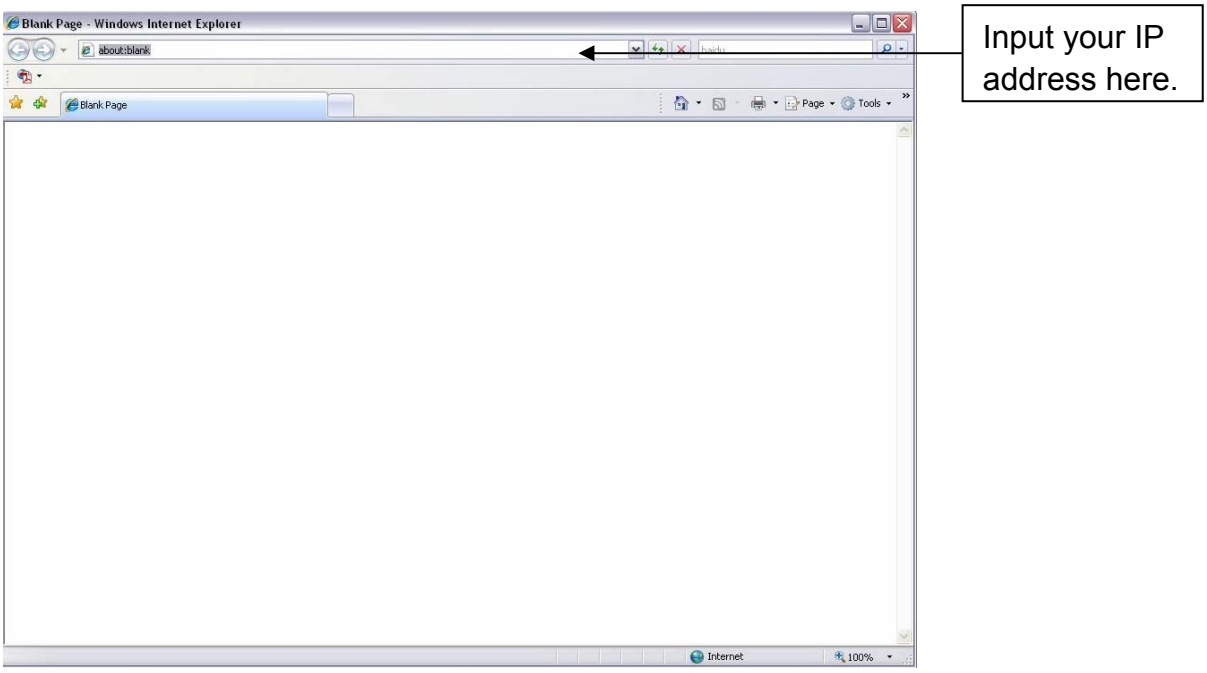


Figure 7-1

System pops up warning information to ask you whether install webrec.cab control or not. Please click yes button.

If you can't download the ActiveX file, please modify your settings as follows. See Figure 7-2.

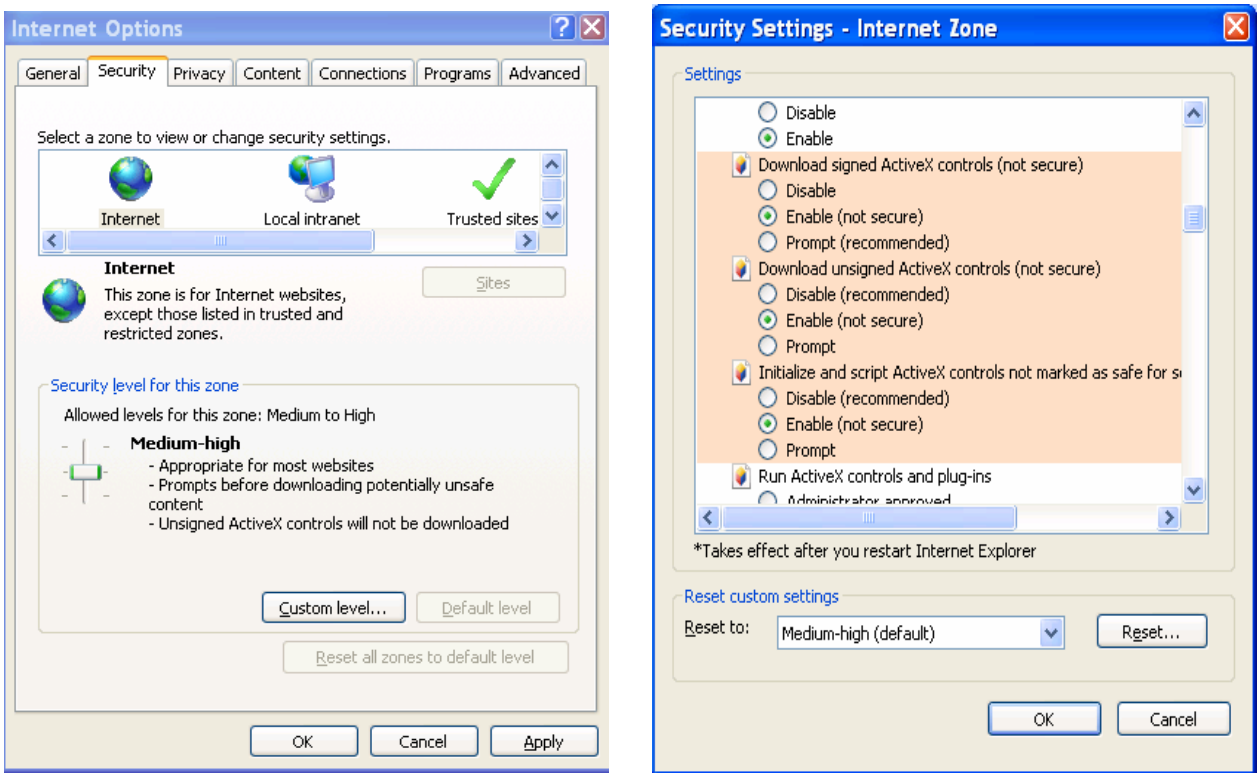


Figure 7-2

After installation, the interface is shown as below. See Figure 7-3.
Please input your user name and password.
Default factory name is admin and password is admin.
Note: For security reasons, please modify your password after you first login.

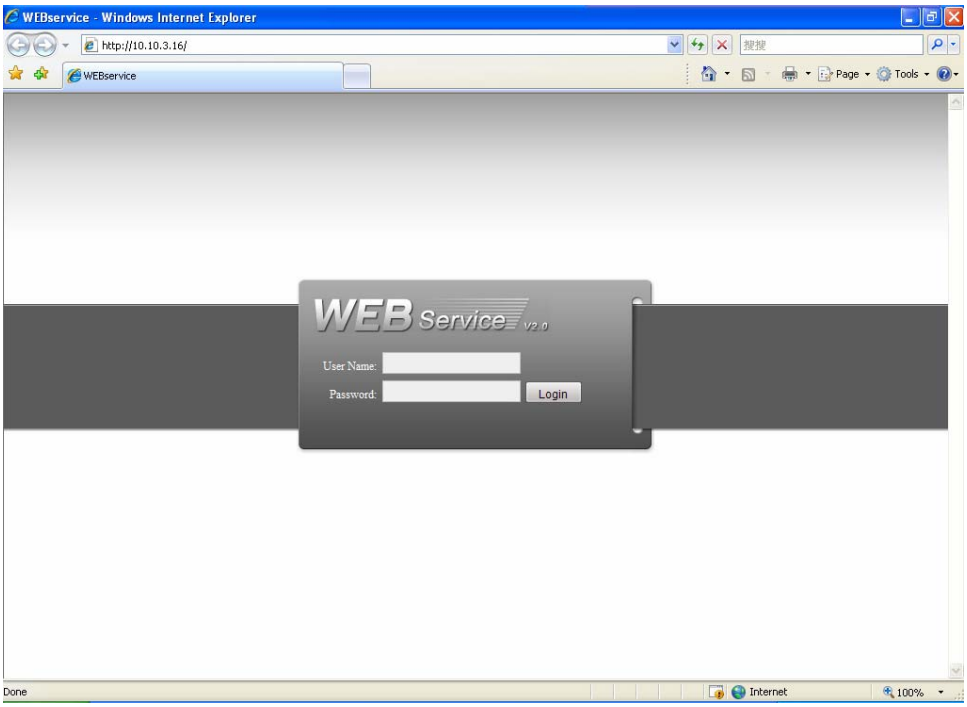


Figure 7-3

After you logged in, you can see the main window. See Figure 7-6.
This main window can be divided into the following sections.

- Section 1: there are five function buttons: configuration (chapter 7.3), search (chapter 7.4), alarm (chapter 7.5), about (chapter 7.6), log out (chapter 7.7).
- Section 2: there are channel number and three function buttons: refresh, start dialog and local play.
- Section3: there are PTZ (chapter 7.2.2), color (chapter 7.2.3) button and you can also select picture path and record path.
- Section 4:real-time monitor window. Please note current preview window is circled by a green rectangle zone.
- Section 5: Here you can view window switch button. You can also select video priority between fluency or real-time.
  - ✧ System monitor window switch supports full screen/1-window/4-window/6-window/8-window/9-window/13-window/16-window/20-window/25-window/36-window. See Figure 7-4.

Figure 7-4

- ✧ Preview window switch. System support 1/4/8/9/16-window real-time preview. Please you need to have the proper rights to implement preview operation. You can not preview if you have no right to preview the either channel. See Figure 7-5.

Figure 7-5

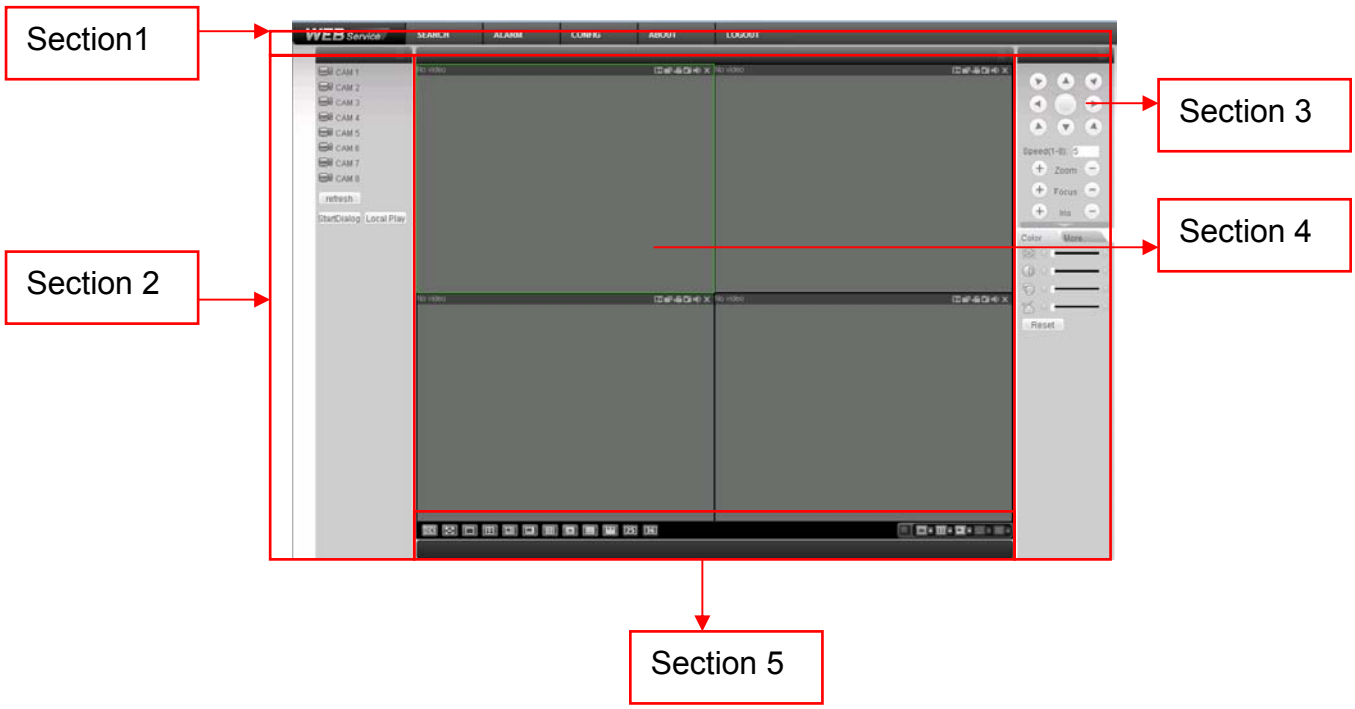


Figure 7-6

7.2.1 Real-time Monitor

In section 2, left click the channel name you want to view, you can see the corresponding video in current window.

For detailed function key information, please refer to Figure 7-7.

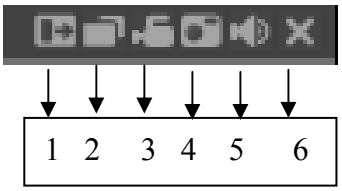


Figure 7-7

- 1: Digital zoom: Click this button and then left drag the mouse in the zone to zoom in. right click mouse system restores original status.
- 2: Change show mode: resize or switch to full screen mode.
- 3: Local record. When you click local record button, the system begins recording and this button becomes highlighted. You can go to system -.local record to set video file path.
- 4: Capture picture. You can snapshoot important video. All images are memorized in system client folder \download\picture (default).
- 5: Audio :Turn on or off audio.(It has no relationship with system audio setup)
- 6: Close video.

Please refer to Figure 7-8 for main stream and extra stream switch information.

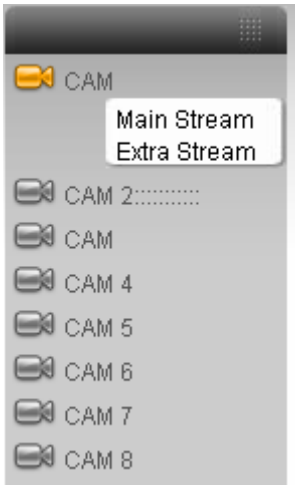


Figure 7-8

Refresh

You can use this button to refresh camera list.

Start Dialogue

You can click this button to enable audio talk.

Local Play

Click local play button, system pops up the following interface for you to select local play file. See Figure 7-9.

Figure 7-9

7.2.2 PTZ

Before PTZ operation, please make sure you have properly set PTZ protocol. (Please refer to chapter 7.3.2 Setting-> Pan/Tilt/Zoom).

Click PTZ button, the interface is shown as in Figure 7-10 .

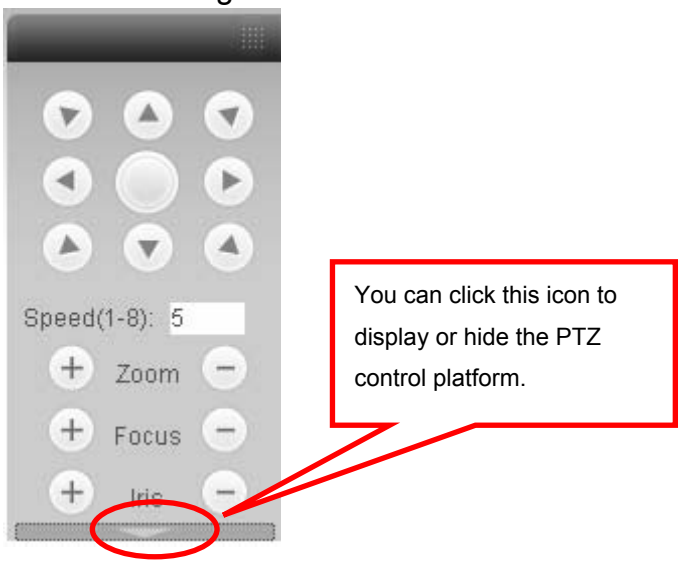


Figure 7-10

7.2.2.1 Direction key and 3D positioning key

In Figure 7-10, there are eight direction keys.

In the middle of the eight direction keys, there is a 3D intelligent positioning key. Click SIT button, system goes back to the single screen mode. Drag the mouse in the screen to adjust section size. It can realize PTZ automatically.

7.2.2.2 Speed

System supports eight-level speed. You can select from the dropdown list. Speed 2 is faster than speed 1.

7.2.2.3 Zoom/Focus/Iris

Here is a sheet for you reference.

Name	Function key	Function	Function key	Function
Zoom		Near		Far
Focus		Near		Far
Iris		close		Open

Then click triangle icon in Figure 7-10, you can see the following interface. See Figure 7-11.

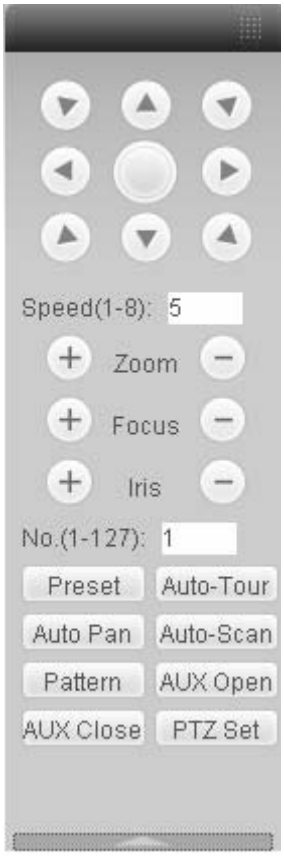


Figure 7-11

In Figure 7-11, click PTZ setup button you can see the following interface. See Figure 7-12.

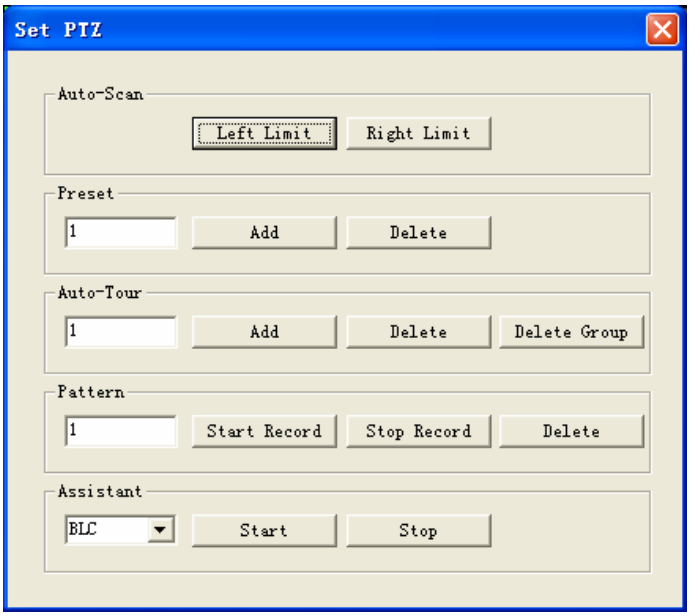


Figure 7-12

7.2.2.4 Auto Scan

In Figure 7-12, move the camera to you desired location and then click left limit button.

Then move the camera again and then click right limit button to set a right limit.

7.2.2.5 Pattern

In Figure 7-12, you can input pattern value and then click start record button to begin PTZ movement. Please go back to Figure 7-11 to implement camera operation.

Then you can click stop record button. Now you have set one pattern.

7.2.2.6 Preset

In Figure 7-12, move the camera to your desired location and then input preset value. Click add button, you have set one preset.

7.2.2.7 Auto tour

In Figure 7-12, input auto tour value and preset value. Click add button, you have added one preset in the tour.

Repeat the above procedures you can add more presets in one tour.

7.2.2.8 Assistant

You can select the assistant item from the dropdown list. See Figure 7-13.

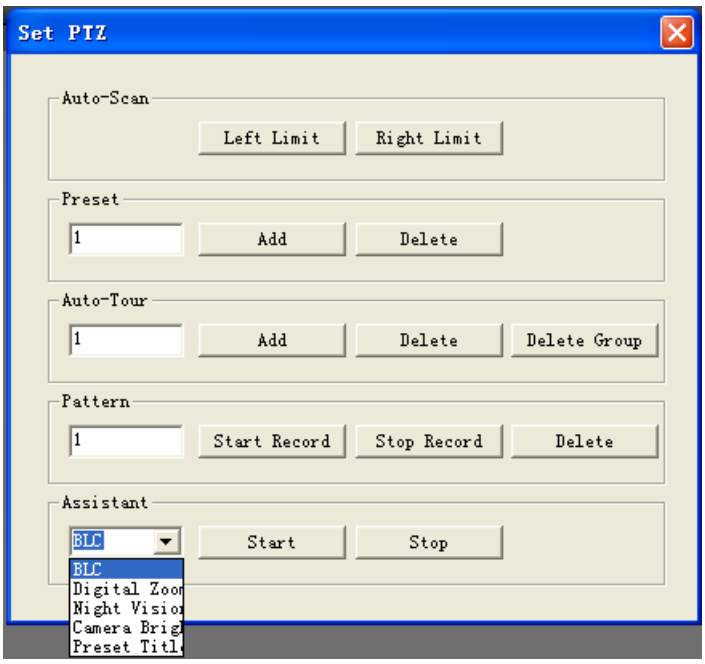


Figure 7-13

7.2.3 Color

Click color button in section 3, the interface is shown as Figure 7-14.

Here you can select one channel and then adjust its brightness, contrast, hue and saturation. (Current channel border becomes green).

Or you can click default button to use system default setup.

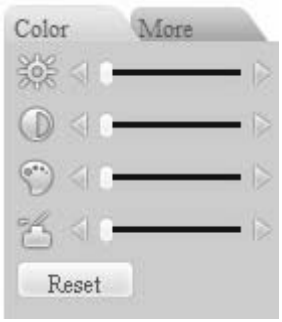


Figure 7-14

7.2.4 Picture Path and Record Path

Click more button in Figure 7-14, you can see an interface is shown as in Figure 7-15.

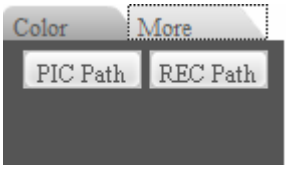


Figure 7-15

Click picture path button, you can see an interface is shown as in Figure 7-16.

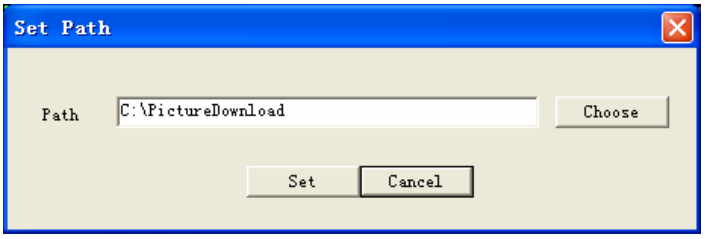


Figure 7-16

Click record path button, you can see an interface is shown as in Figure 7-17.

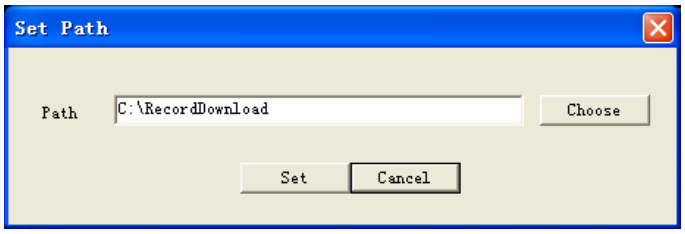


Figure 7-17

7.2.5 Menu Interface Switch

Put your mouse on the PTZ control bar until you see the following icon. See Figure 7-18.

Figure 7-18

Left click your mouse and then drag it to the channel control status bar. You can see the two menus interface switched. See Figure 7-19. You can compare the following interface with Figure 7-6.

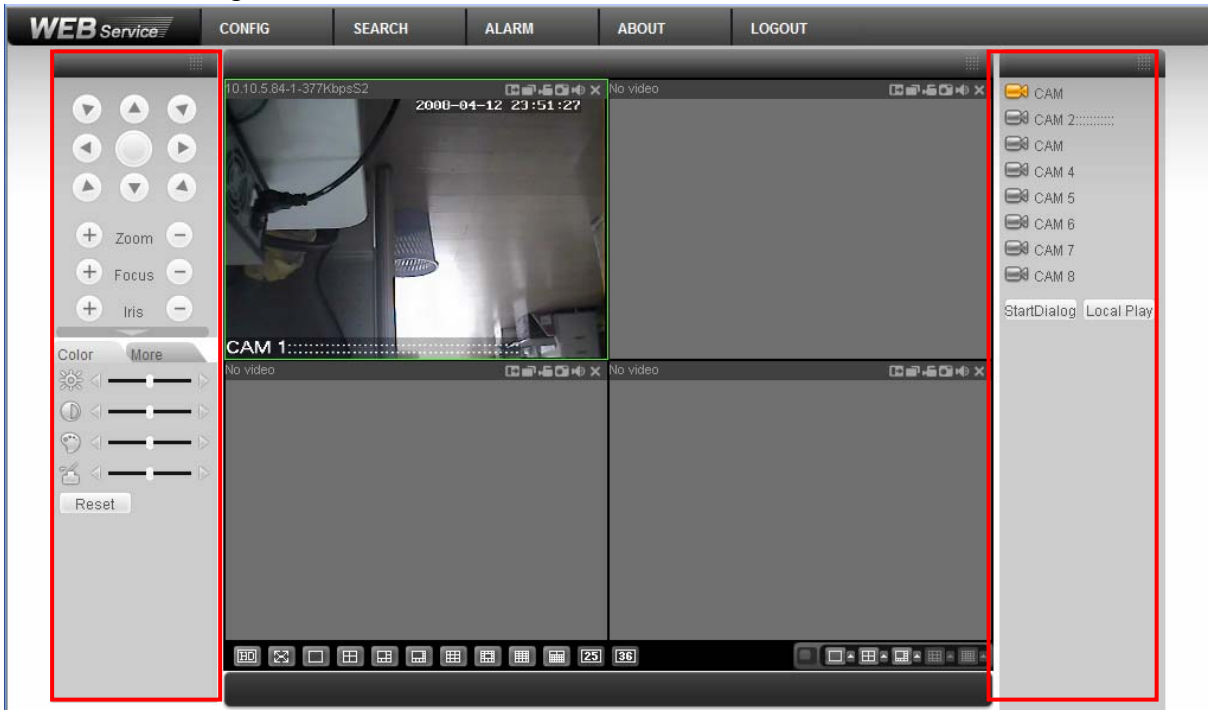


Figure 7-19

7.3 Configure

In the main window, click config button, you can see an interface is shown as in Figure 7-20.

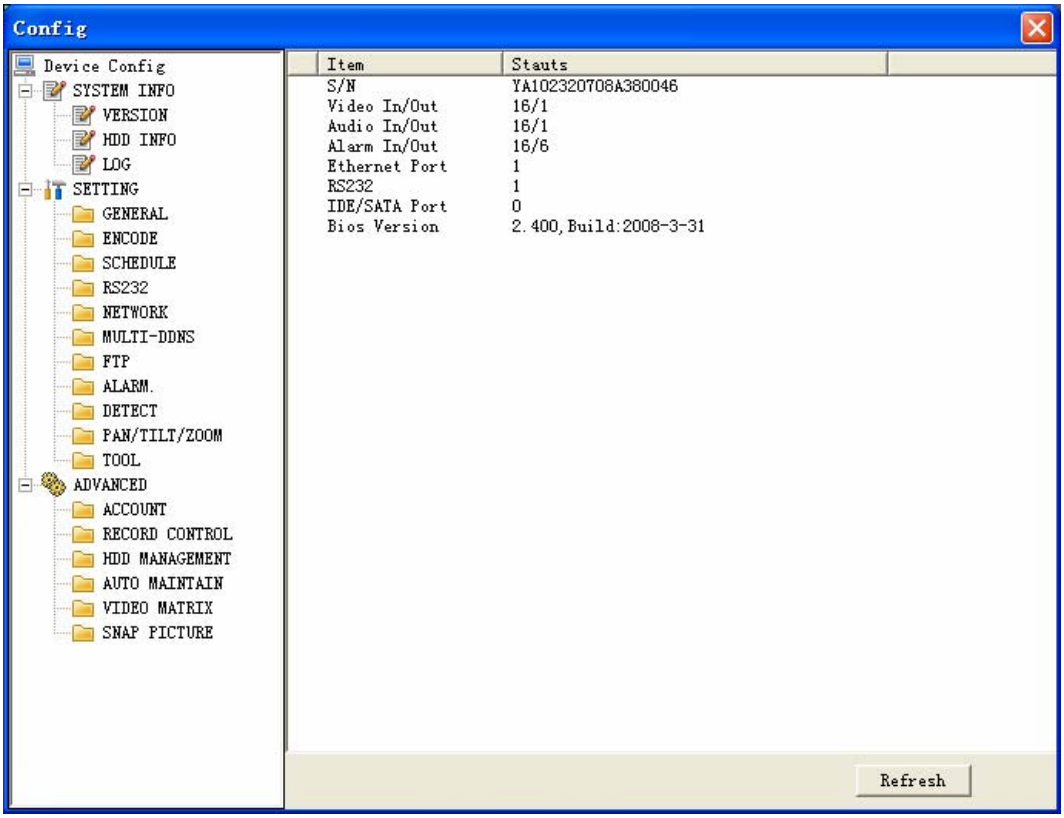


Figure 7-20

7.3.1 System Information

Click device configuration button, you can see the following interface. See Figure 7-21.

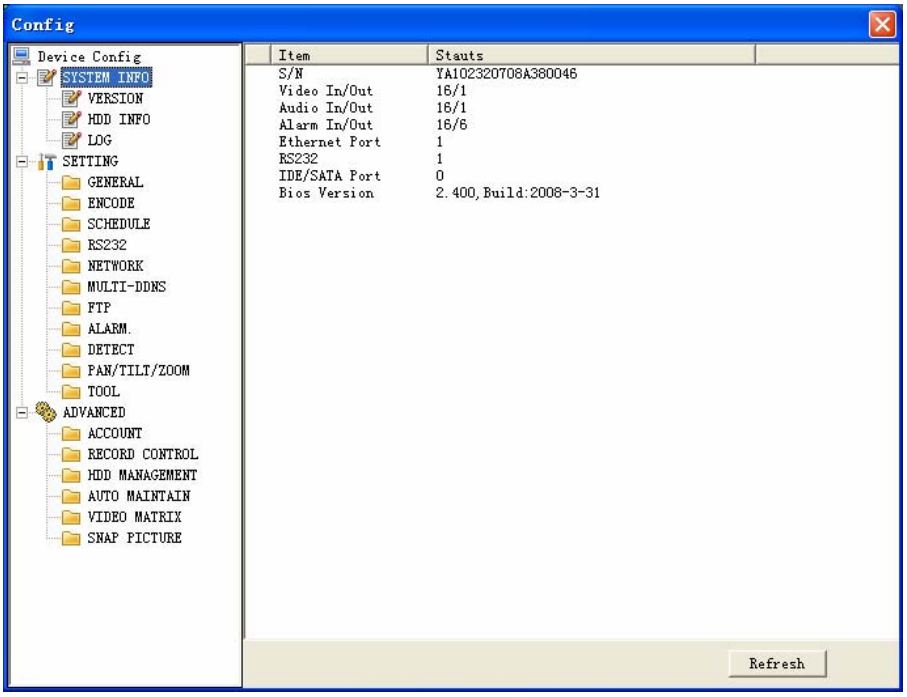


Figure 7-21

- **Version**

Click version button, you can see corresponding HDD information for your reference. See Figure 7-22.

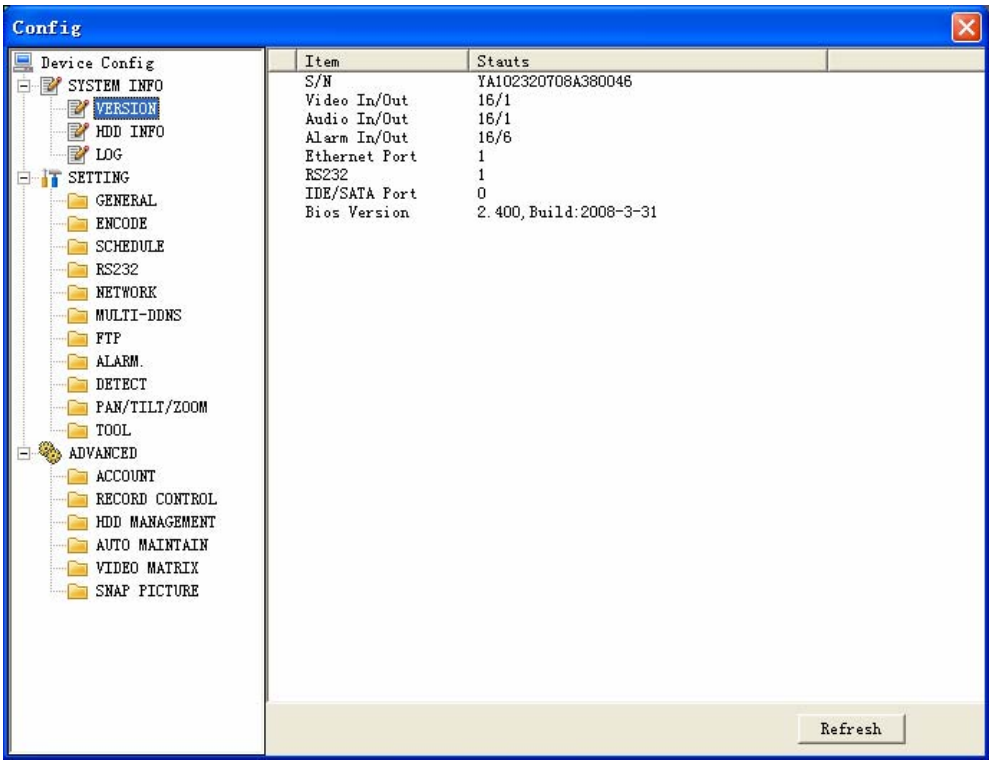


Figure 7-22

- **HDD Information**

Here you can view HDD amount, HDD status, total volume and free space. See Figure 7-23.

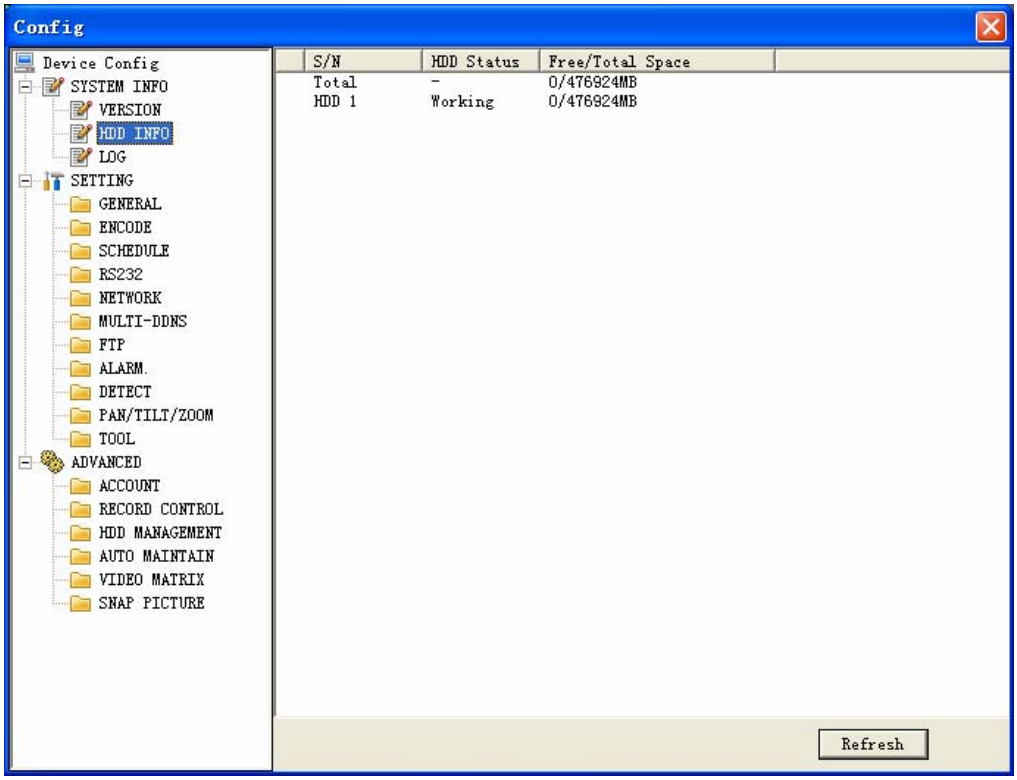


Figure 7-23

- **Log**

Click log button, you can see an interface is shown as in Figure 7-24. Here you can view current device log information.

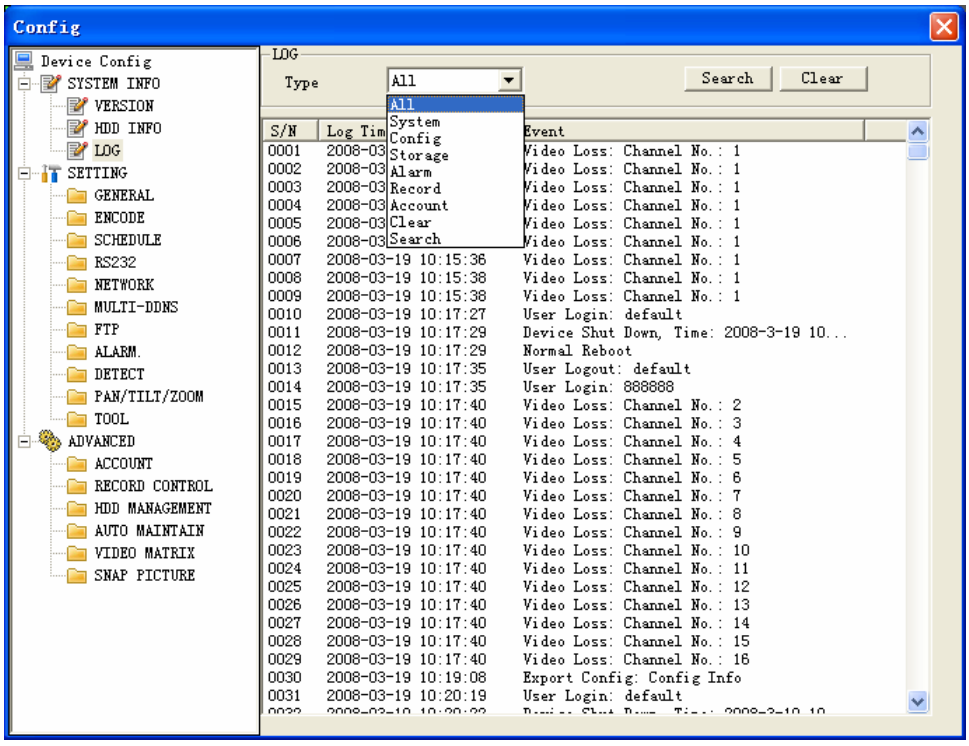


Figure 7-24

7.3.2 Setting

Setting includes the following items:

- ✧ General
- ✧ Encode setup
- ✧ Schedule
- ✧ RS232
- ✧ Network
- ✧ MUL-DDNS
- ✧ FTP
- ✧ Alarm setup
- ✧ Detect
- ✧ Pan/Tilt/Zoom
- ✧ Tool

Please note: setups for different device series may vary. Please refer to the corresponding user's manual.

- **General**

General interface is shown as in Figure 7-25.

- ✧ System time: Here is for you to modify system time. Please click Save after your modification
- ✧ Data format: Here you can select data format from the dropdown list.
- ✧ Data separator: Please select separator such as – or /.
- ✧ Time format: there are two options: 24-H and 12-H.
- ✧ HDD full: there are two options: stop recording or overwrite the previous files when HDD is full.
- ✧ Pack duration: Here you can select file size. Default setup is 60 minutes.
- ✧ Device No.: when you are using one remote control to manage multiple DVRs, you can give these DVRs serial numbers respectively. Click address button in your remote control and then input the correct device number, now you can control the DVR now.
- ✧ Video standard: PAL. (for your reference only)

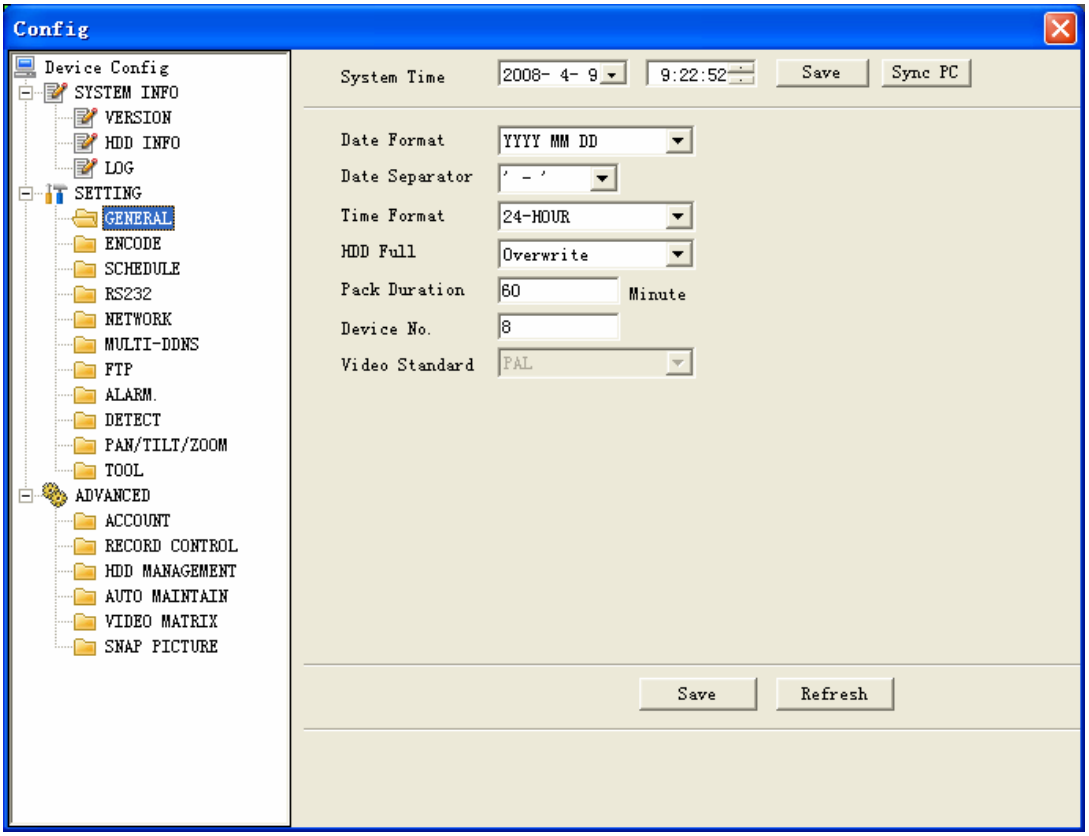


Figure 7-25

- **Encode**

Encode setup includes the following items. See Figure 7-26.

Here you can select

- ✧ Channel: Here is for you to select a channel.
- ✧ Channel name: Modify channel name.
- ✧ Data stream: Regular and extra data stream.
- ✧ AV enable: Video/Audio. System only displays video by default. You need to manually enable audio function.
- ✧ Bit rate: There are two options: CBR and VBR. You can only set video quality in VBR mode.
- ✧ Frame rate: The value ranges from 1f/s to 25f/s (PAL) and 1f/s to 30f/s (NTSC).
- ✧ Compression: There are two options: H.264 and MPEG 4.
- ✧ Resolution: D1/HD1/DCIF/CIF
- ✧ Quality: The value ranges from 1 to 6. The level 6 is the best video quality.

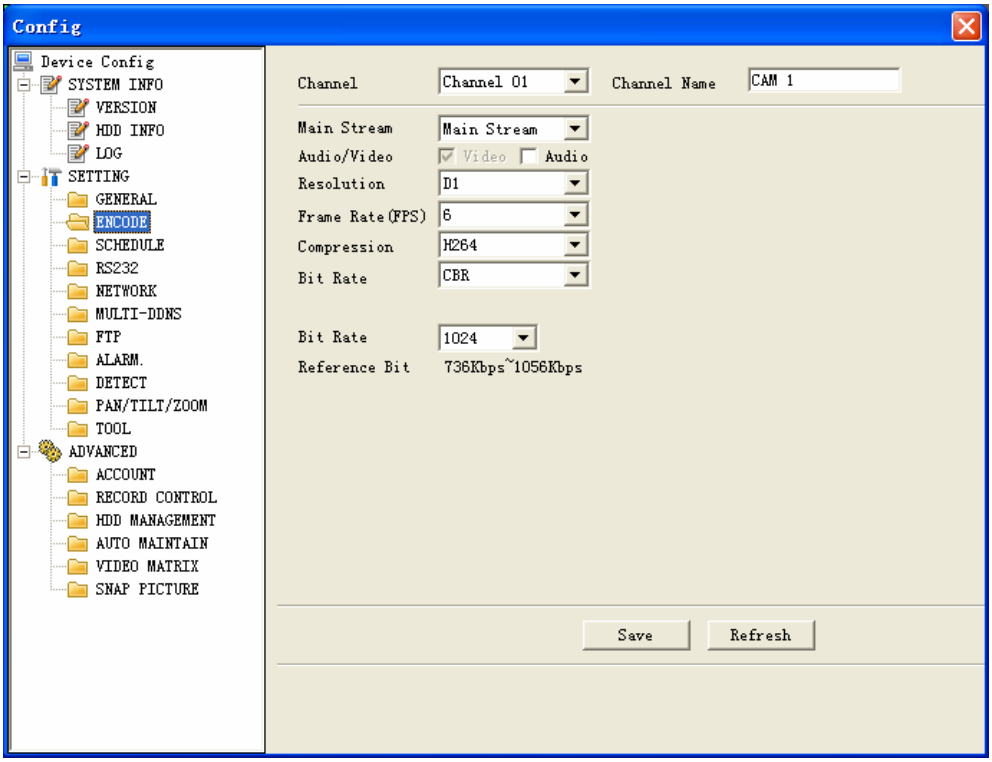


Figure 7-26

- **Schedule**

Schedule includes the following interface. See Figure 7-27.

When DVR boots up, it is in 24-hour continuous record. In this interface you can set record type, record time and period. Record type includes regular record(R), motion detection record (M) and alarm record (A).

- ✧ Channel: select the channel number you desire.
- ✧ Week: you can select from the dropdown list. Or you can select at the bottom of the interface.
- ✧ Prerecord: system can record the three to five seconds video before activating the record operation into the file.(Depends on data size)
- ✧ Period: There are six periods for you to set. Please click set button of the corresponding period. See Figure 7-28.Please note all the setup here shall be in one day. E.g. 00.00 to 24.00.

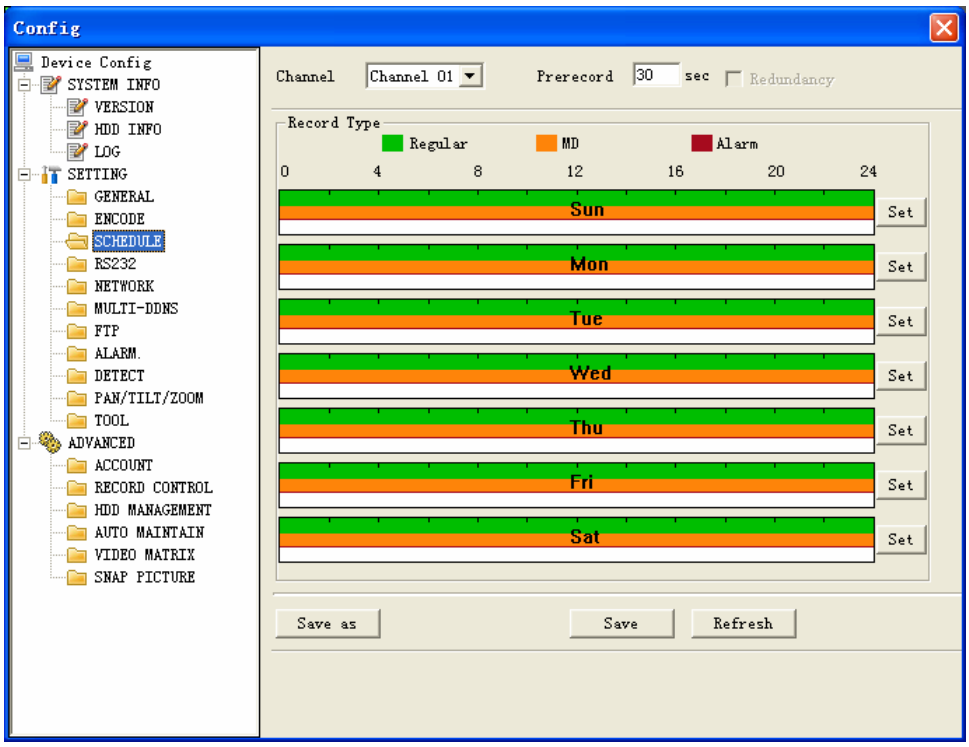


Figure 7-27

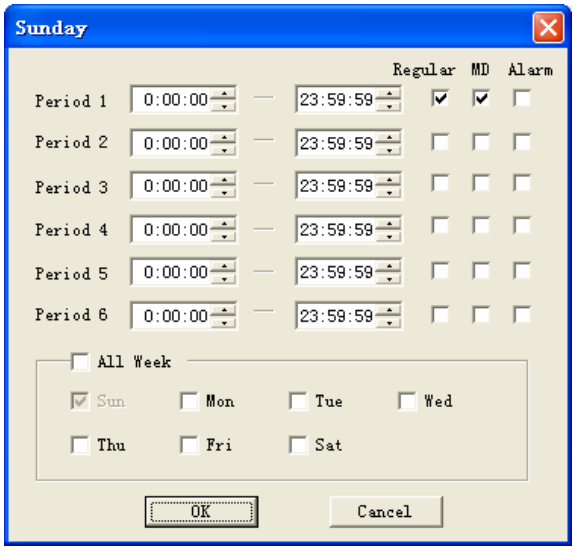


Figure 7-28

Tip:

After you finished setup for one channel, you can click “save as” button, system pops up the following interface. See Figure 7-29.Now you can copy one channel setup to other channels.

Figure 7-29

- **Network**

Network interface is shown as in Figure 7-30.
This interface includes the following items:
Max: Here you can set max connection amount. The value ranges from 0 to 10. 0 means no network connection is allowed.
TCP port: default setup is 37777. Please note port 37778 is for network UDP port use only.
HTTP port: default setup is 80.
Transfer: here you can select the priority between fluency/video quality.

✧ **Enable PPPoE**

In remote item, enable PPPoE function and then input “PPPoE name” and “PPPoE password” you get from your ISP (Internet service provider). See Figure 7-30.
Click save button, you need to restart to activate your configuration.
After rebooting, DVR will connect to internet automatically. The IP displayed in the IP address item is the dynamic value. You can use client-end software to visit current IP now.

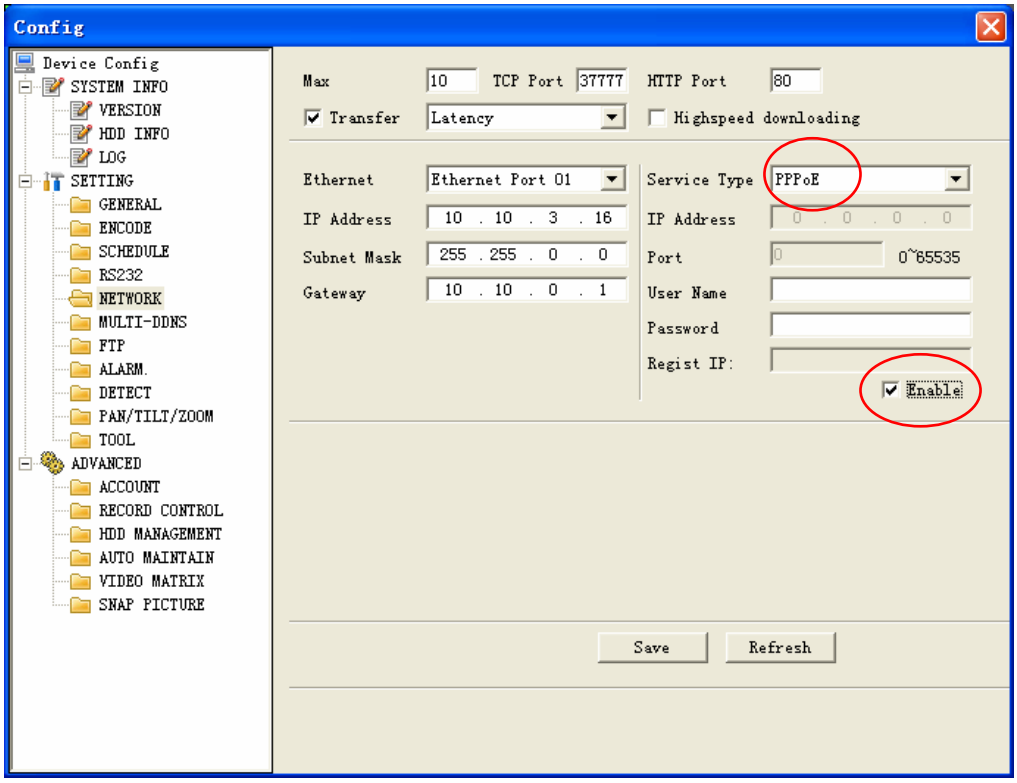


Figure 7-30

✧ **Enable DDNS**

You need a PC of fixed IP in the internet and there is the DDNS software running in this PC. In other words, this PC is a DNS (domain name server).see Figure 7-31. Please enable DDNS function and then input PC IP. Click save button and then reboot device. Now you can login via DDNS. Please open IE and then input http：//(DDNS server IP)/ DDNServer / default.htm. for example, input http：//10.5.2.149/DDNServer/default.htm, you open a DDNS server web page.

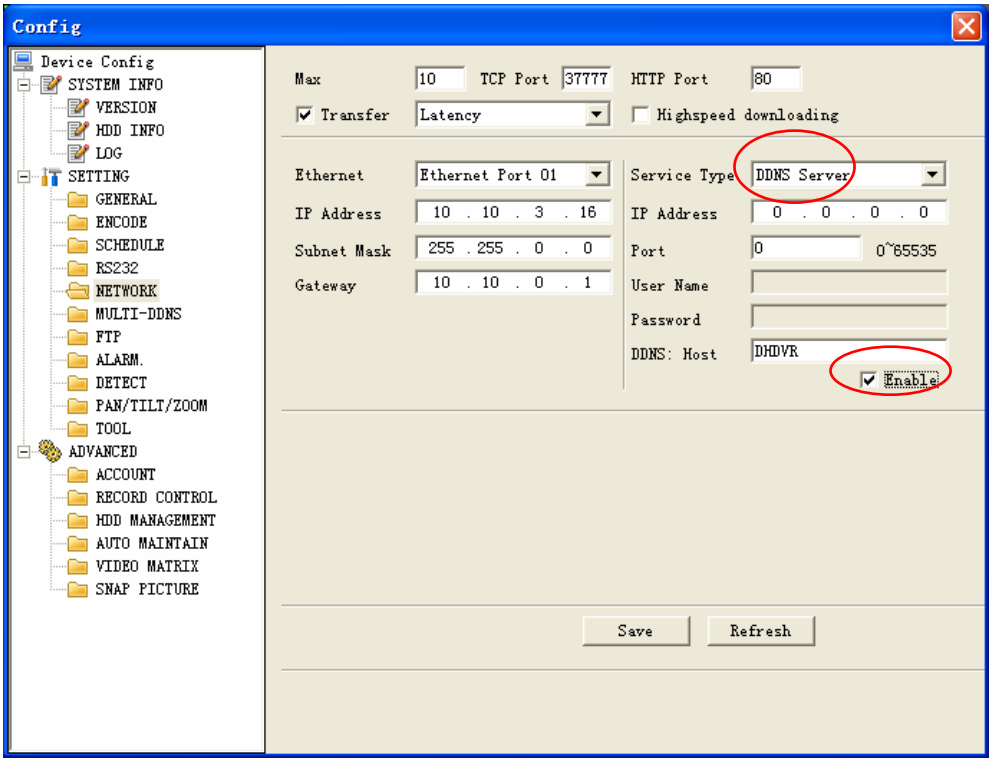


Figure 7-31

- **RS232**

RS232 includes the following items. See Figure 7-32.

✧ Function: There are various devices for you to select. Console is for serial port or min-end platform to upgrade program. Keyboard is for you to use special keyboard to control current device.

✧ Baud rate: Please select as you desire.

✧ Data bit: The value ranges from 5 to 8.

✧ Stop bit: There are three options: 1/1.5/2.

✧ Parity: There are three options: none/odd /even.

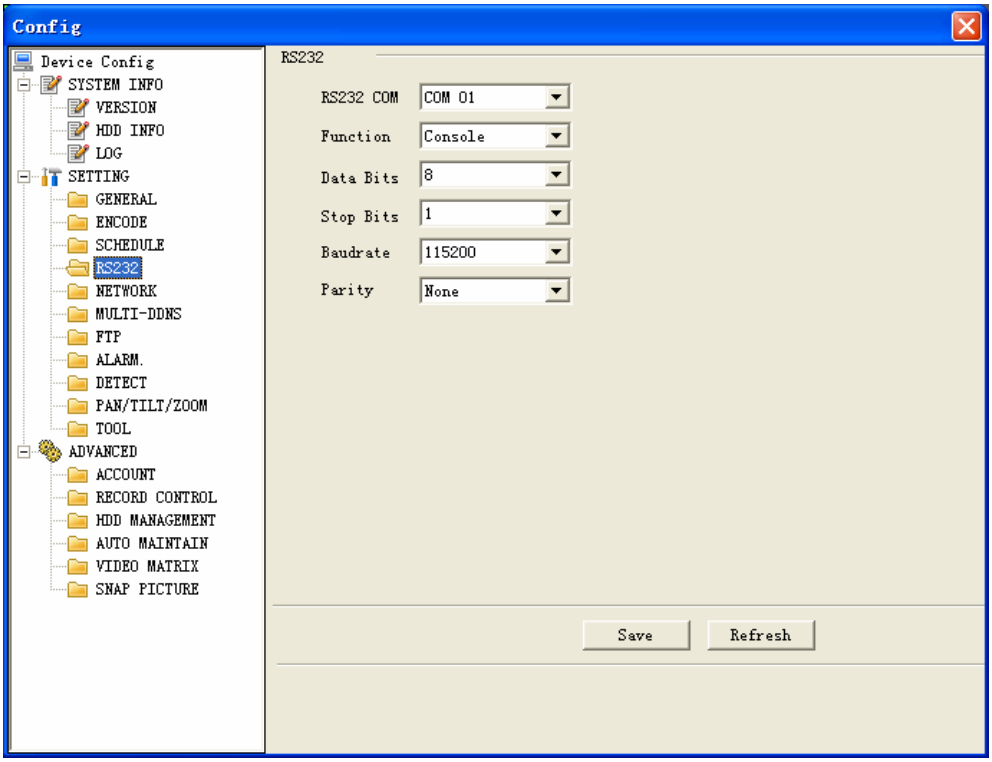


Figure 7-32

- Mul-DDNS

Here you can select DDNS type. This operation needs DVR device supported. See Figure 7-33.

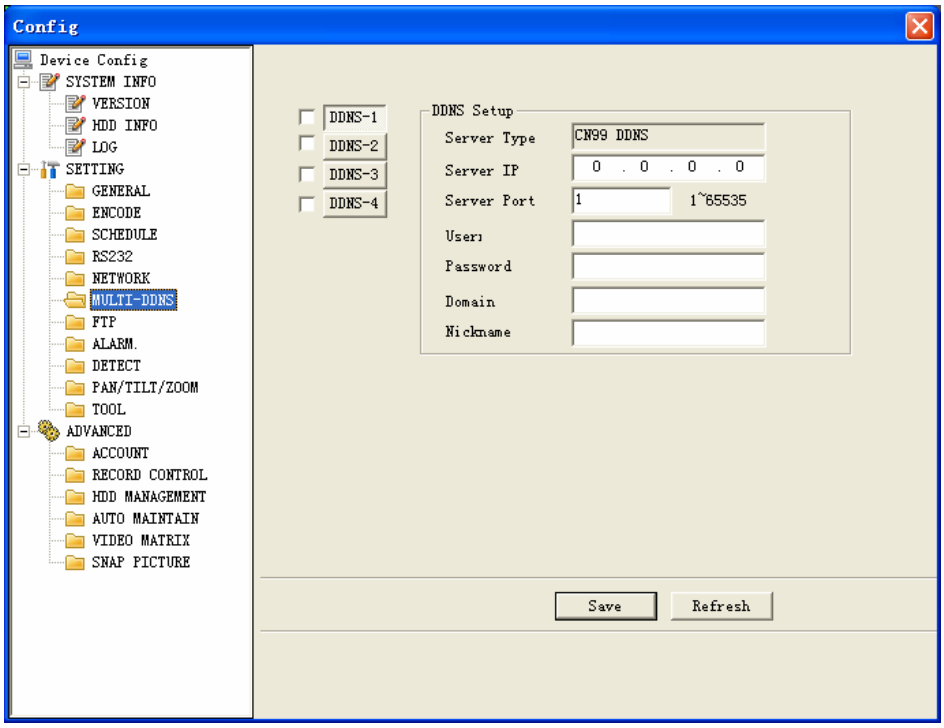


Figure 7-33

- **FTP**

After you completed setup here, system upload scheduled data to the specified FTP server regularly. Need device supported.

In Figure 7-34, you need to input FTP server address, port, log in user name and password. Then you need to specify the destination directory to save files.

- File: here you can input uploaded file length (Unit: MB) if the file is smaller than the setup value here, system upload the whole file. If the file is larger than the setup value, system only uploads the setup value data and ignores the rest data.
- Interval: for one channel of the same record type if there is more than one alarm, system only uploads the first file. For example, if the interval is five minutes, then system only uploads the first alarm or motion detection file even though there are several alarms in these five minutes. If the setup is 0, then system upload all files.
- Time period: Click set button, you can an interface as in Figure 7-35. You can check the box to select the file type. System supports multiple choices.

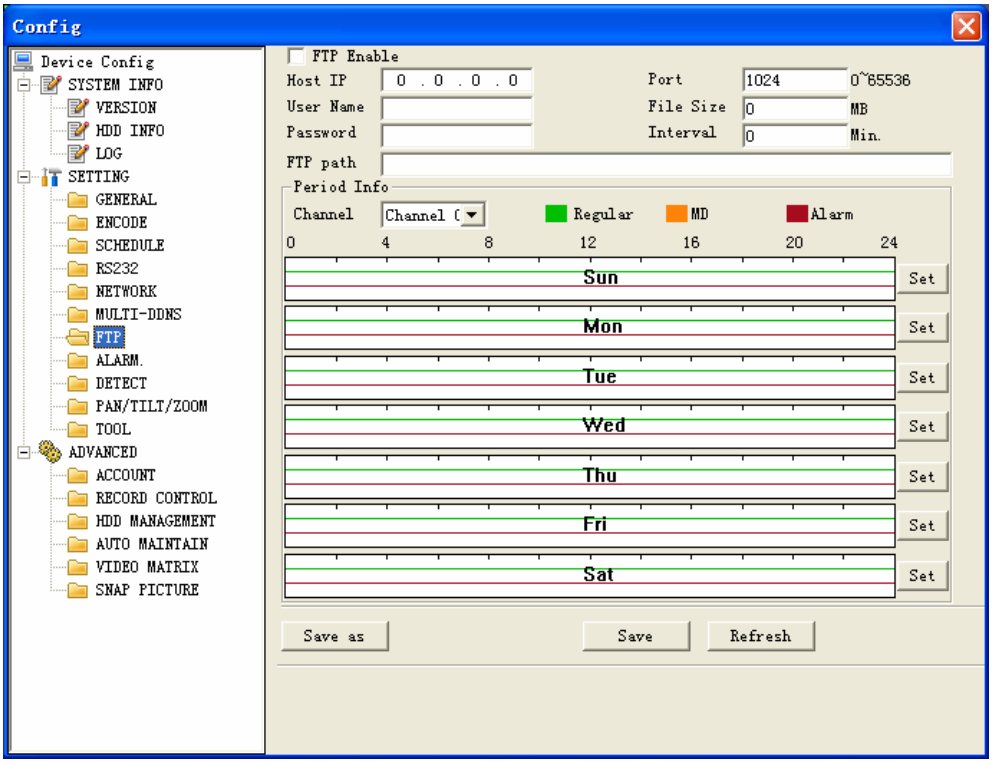


Figure 7-34

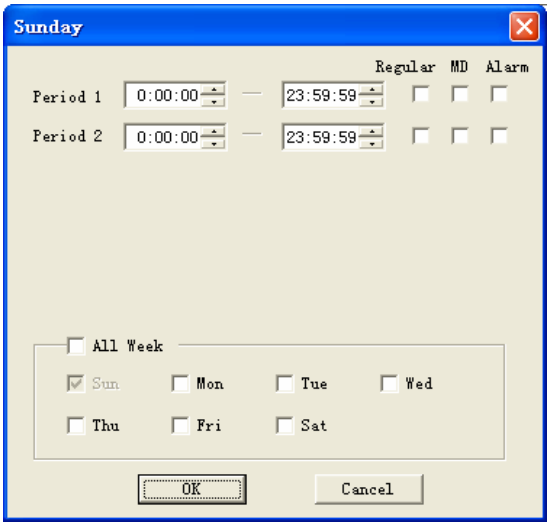


Figure 7-35

- **Alarm**

Please note before alarm setup, you need to properly connect alarm input and output device, send address and receive address. Click save button confirm current setup. Alarm setup includes the following items. See Figure 7-36.

- ✧ Event Type: you can select event type from the drop down list: Local alarm/Net alarm.
- ✧ Alarm in: Select corresponding alarm in channel
- ✧ Type: There are two options: normal open and normal close.
- ✧ Record channel: select record channel when alarm occurs. Please note you need to select alarm record in DVR schedule interface and enable schedule function in manual record interface.
- ✧ Alarm output: select alarm activation channel when alarm occurs. Please note channel 3 is to control +12V output.
- ✧ Show message: System can pop up a message to alarm you in the local host screen if you enabled this function.
- ✧ Email: System can send out email to alert you when alarm occurs.
- ✧ PTZ activation: Here you can set PTZ movement when alarm occurs. Such as go to preset x when there is an alarm. Click set button, the interface is shown as in Figure 7-37.
- ✧ Tour: Here you can enable tour function when alarm occurs. System supports multiple-window tour. Please go to chapter 5.3.9 Display for tour interval setup.

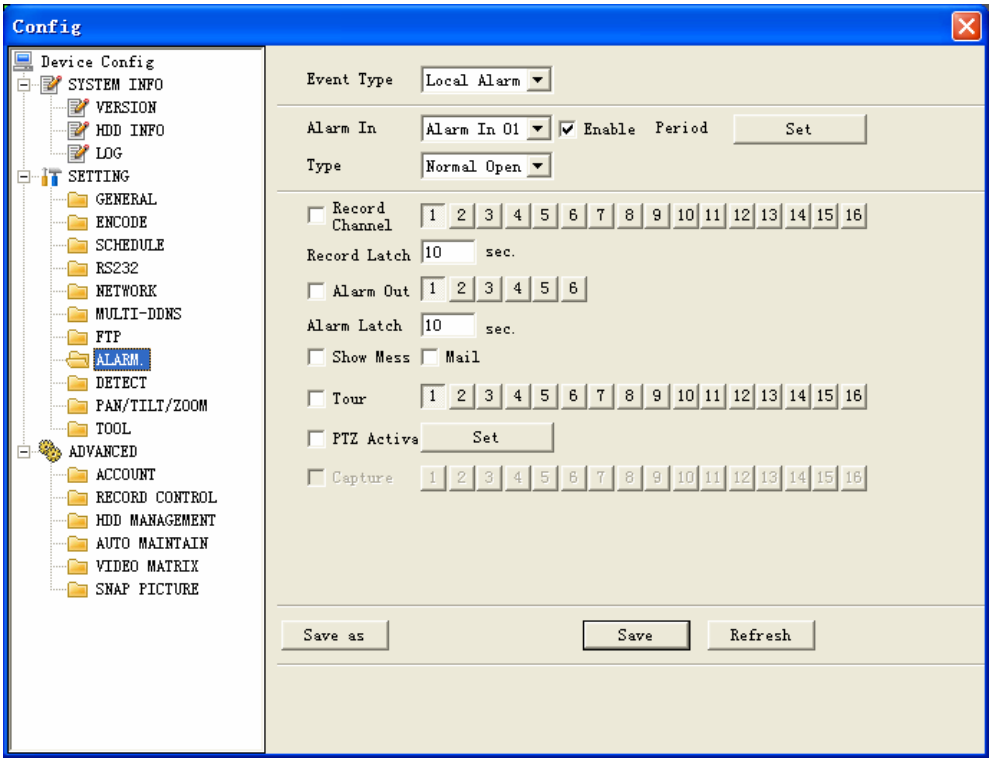


Figure 7-36

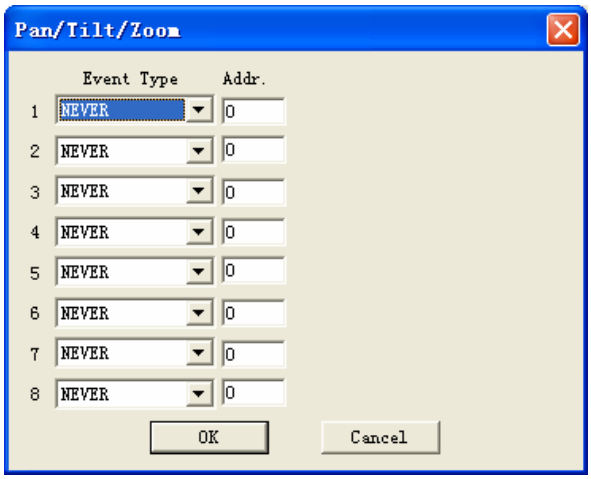


Figure 7-37

- **Detect**

Detect interface is shown as in Figure 7-38.

Here includes the following items:

✧ Channel: Select channel name from the dropdown list.

✧ Type: There are three types: motion detection/Video loss/Camera mask detection.

✧ Record channel: Here you can select record channel (Multiple choices). Please make sure you have set MD record in encode interface(Main Menu->Setting->Schedule) and schedule record in manual record interface(Main Menu->Advanced->Manual Record)

- ✧ Period: Here is for you to set record period. Click set button, you can see an interface is shown as in Figure 7-39. In Figure 7-39, click time set button, you can see an interface is shown as in Figure 7-40. Here you can set time period.
- ✧ Sensitivity: There are six levels. The sixth level has the highest sensitivity.
- ✧ Region: If you select motion detection type, you can click this button to set motion detection zone. The interface is shown as in Figure 7-41. There are 192 zones (16*12). Right click mouse you can go to full-screen display mode. Do remember clicking OK button in Figure 7-41 to save your motion detection zone setup.
- ✧ Alarm output: Here you can select activated external peripheral device when alarm occurs.
- ✧ Show message. System can alert you on the local screen if you enabled this function.
- ✧ Mail: system can send out email to alert you when alarm occurs.
- ✧ Tour: Here you can enable tour function when alarm occurs in corresponding channel. System supports multiple-window tour. Please go to chapter 5.3.9 Display for tour interval setup.
- ✧ PTZ activation: Click set button, you can see an interface is shown as in Figure 7-42. System can go to corresponding preset when alarm occurs.

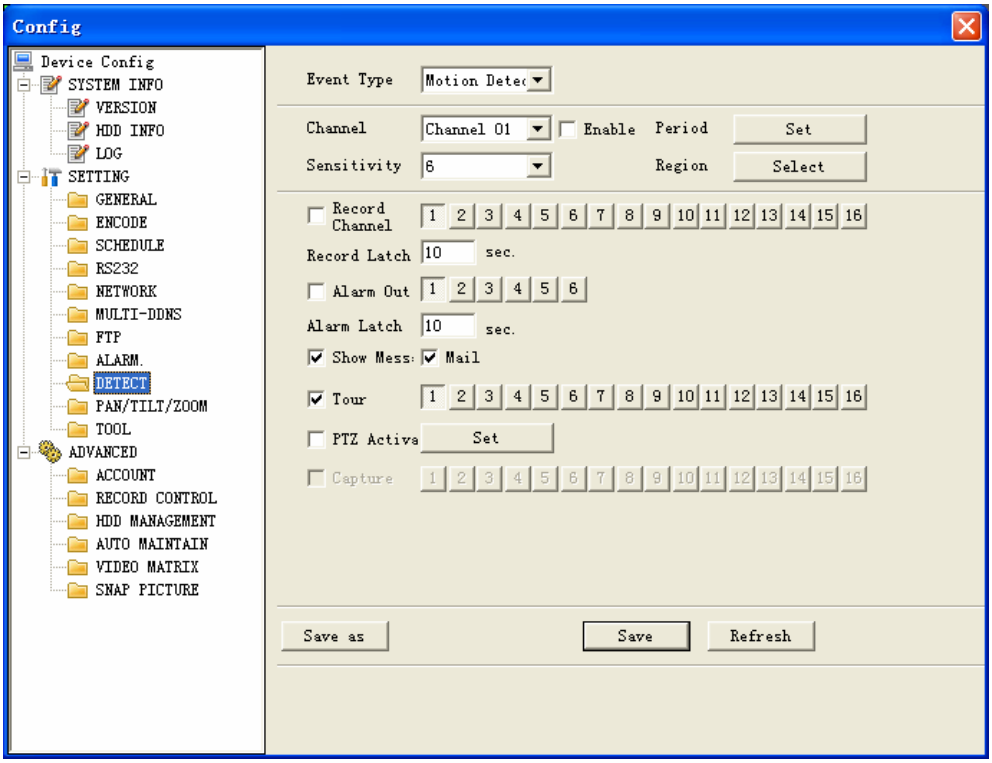


Figure 7-38

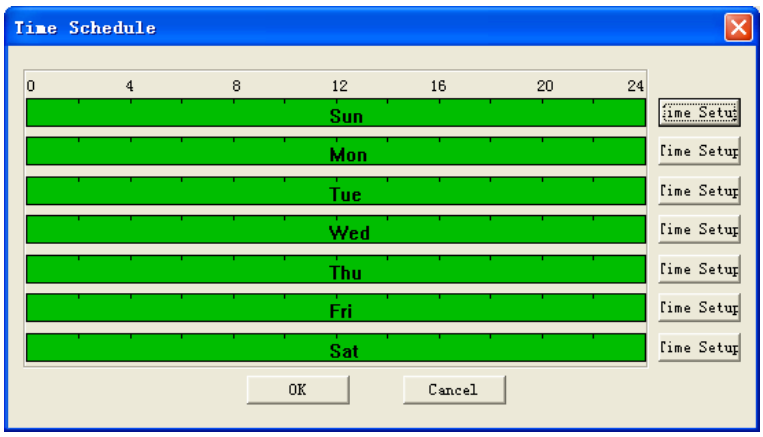


Figure 7-39

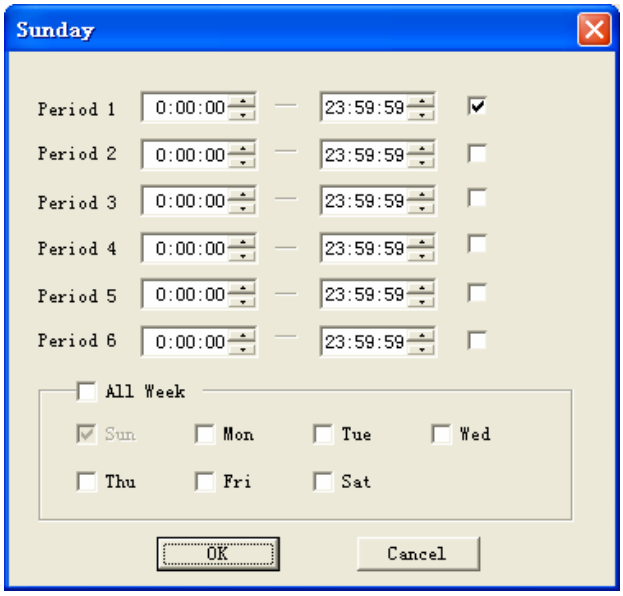


Figure 7-40

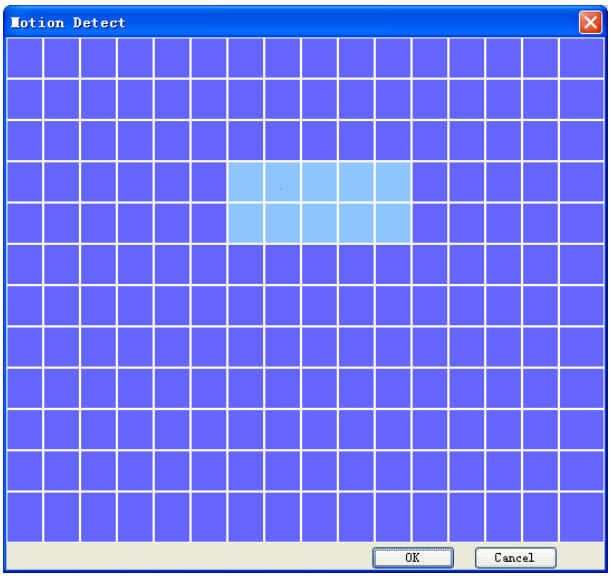


Figure 7-41

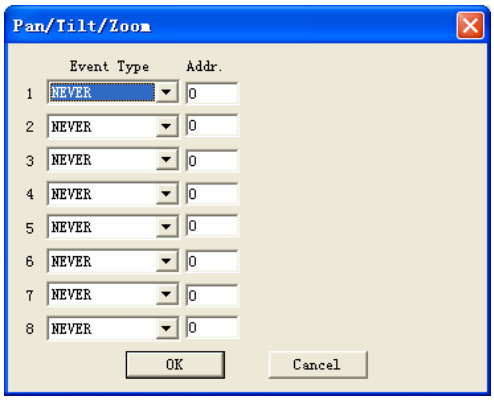


Figure 7-42

- **Pan/Tilt/Zoom**

Pan/Tilt/Zoom interface is shown as in Figure 7-43.

Please note you have properly set dome address and all connections are right.

- ✧ Decoder: Select the dome connected channel.
- ✧ Protocol: select the corresponding dome protocol.(such as Pelco)
- ✧ Address: Set corresponding dome address. Default value is 1. Please note your setup here shall comply with your dome address; otherwise you can not control the speed dome.
- ✧ Baud rate: Select the dome baud rate. Default setup is 9600.
- ✧ Data bit: Default setup is 8.
- ✧ Stop bit: Default setup is 1.
- ✧ Parity: Default setup is none.

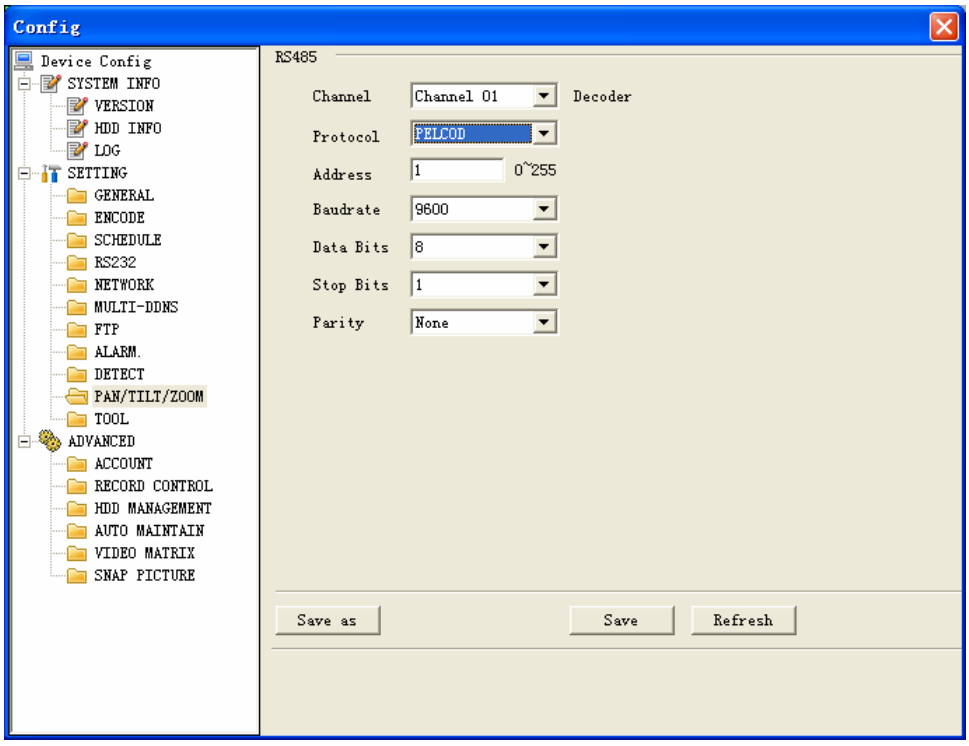


Figure 7-43

- **Tool**

Here you can export or import configuration information. See Figure 7-44.

Save configuration data: Click export config button to save current setup as a file. Extension name is CFG. See Figure 7-45.
Load configuration data: Click import config button, you can load a setup file.

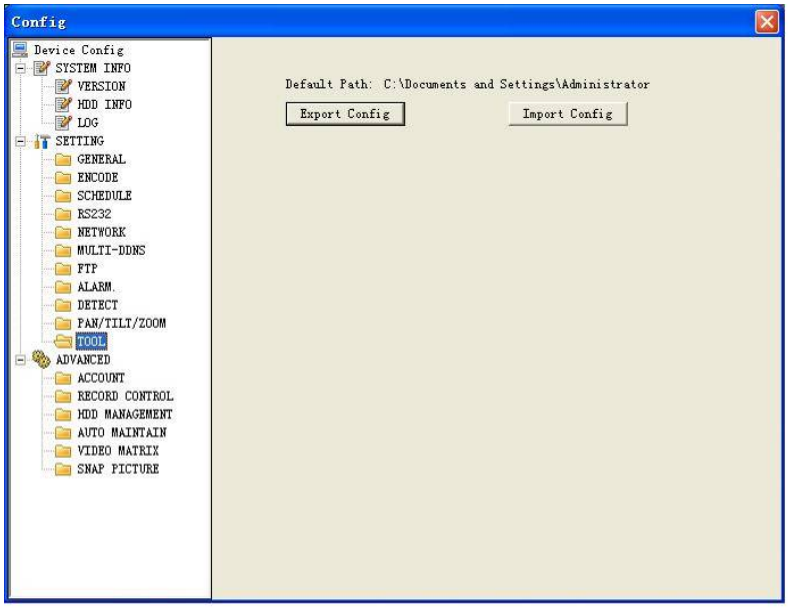


Figure 7-44

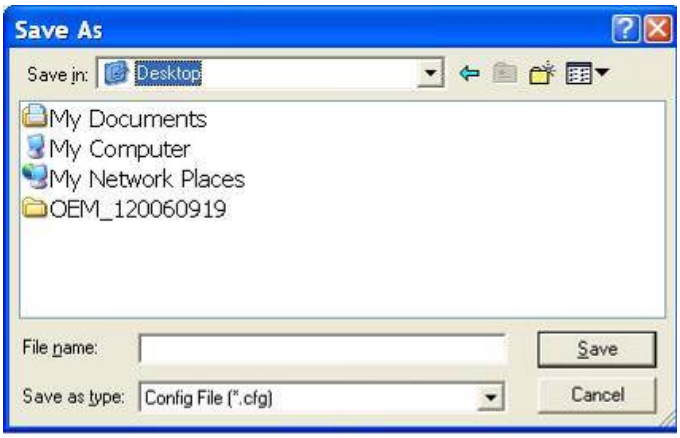


Figure 7-45

7.3.2.1 Advanced

Advanced includes the following items. See Figure 7-46.

- ✧ Account
- ✧ HDD management
- ✧ Alarm input
- ✧ Alarm output
- ✧ Auto maintain
- ✧ Video matrix
- ✧ Snapshoot

- **Account**

Account interface is shown as in Figure 7-46. Here you can add/delete user, add/delete group, modify user or group right, modify user password.

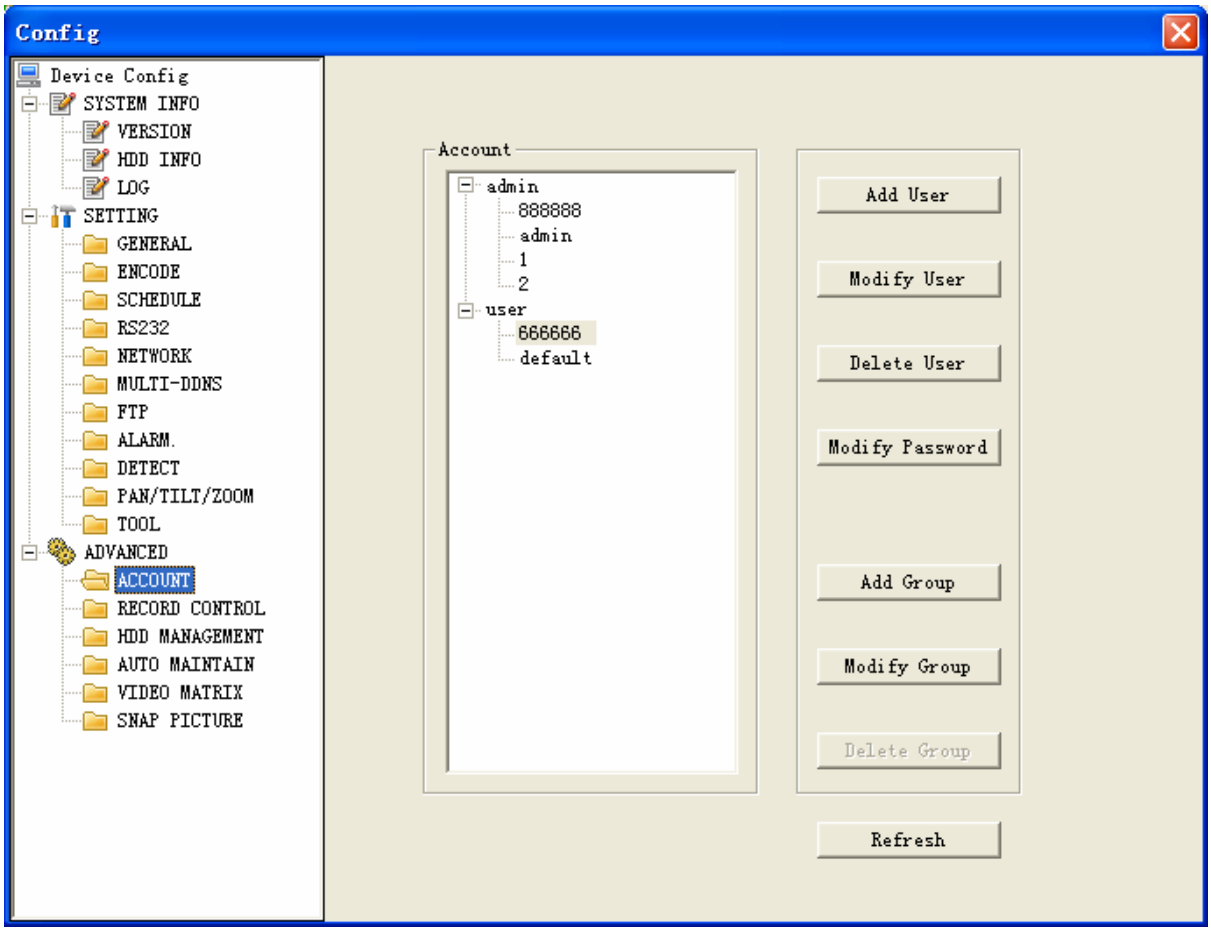


Figure 7-46

Click add group button, you can see the following interface. See Figure 7-47.
Here you can add one new group, and then select corresponding rights for the whole group accounts.

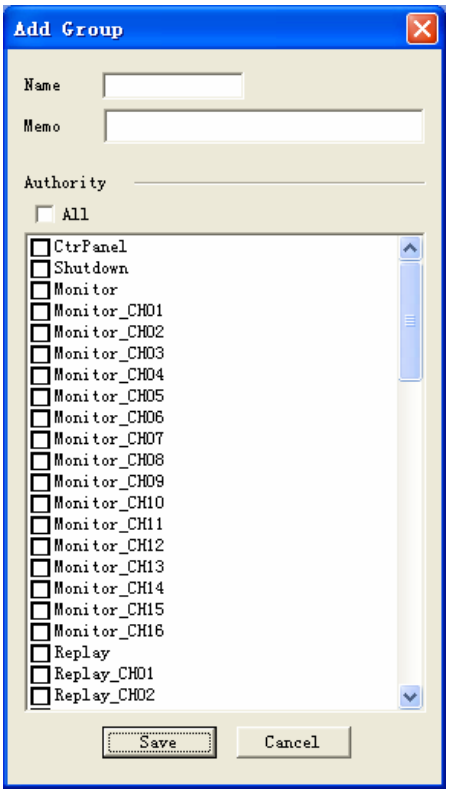


Figure 7-47

Click add user button, you can see the following interface. See Figure 7-48.
Here you can input a new user and then select corresponding rights.
Please note one user must belong to one group and user right shall not exceed group rights limit.

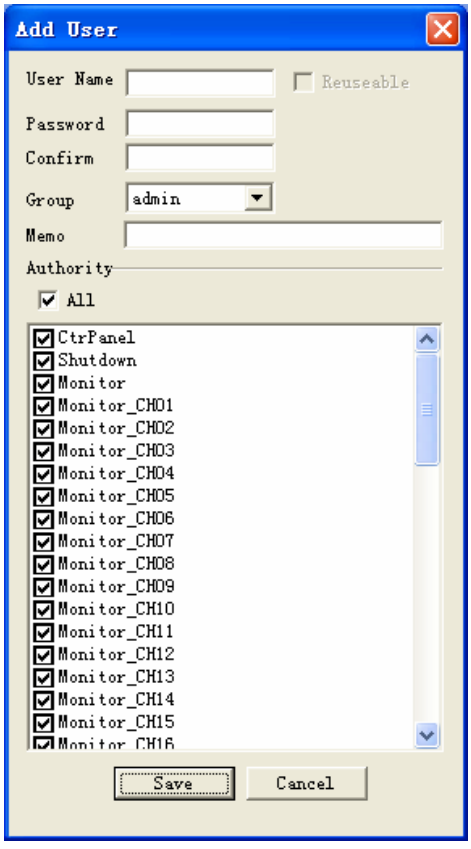


Figure 7-48

- **Record Control**

Record control interface is shown as in Figure 7-49.
Record control: Here you can enable record status for corresponding channel.
Alarm output channel: Here you can select alarm output channel. DVR output channel can not support large overload. (It shall be less than 1A). Too heavy current may result in relay damage. Please use contactor if necessary.

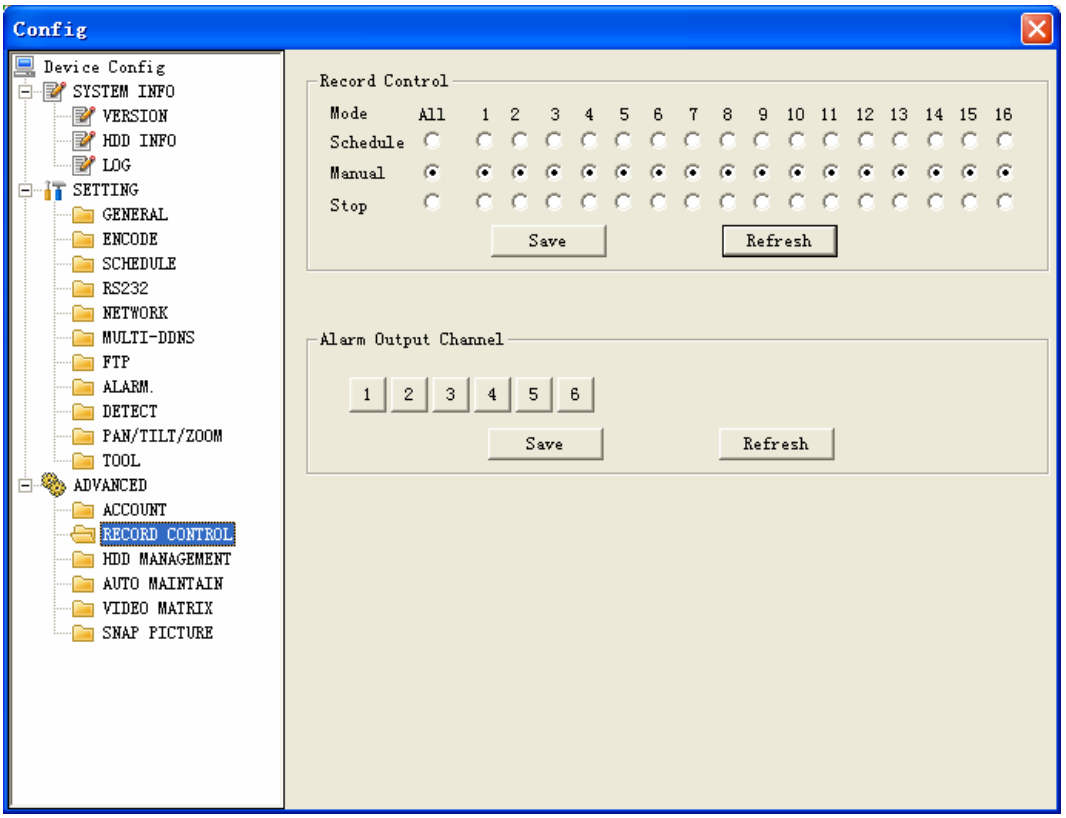


Figure 7-49

- **HDD management**

This function needs DVR device supported.
Please select the HDD first and then you can see the items on your right become valid. You can check the corresponding item here. See Figure 7-50.
After you completed setup, please click control HDD button, you can see the DVR begins restarting.

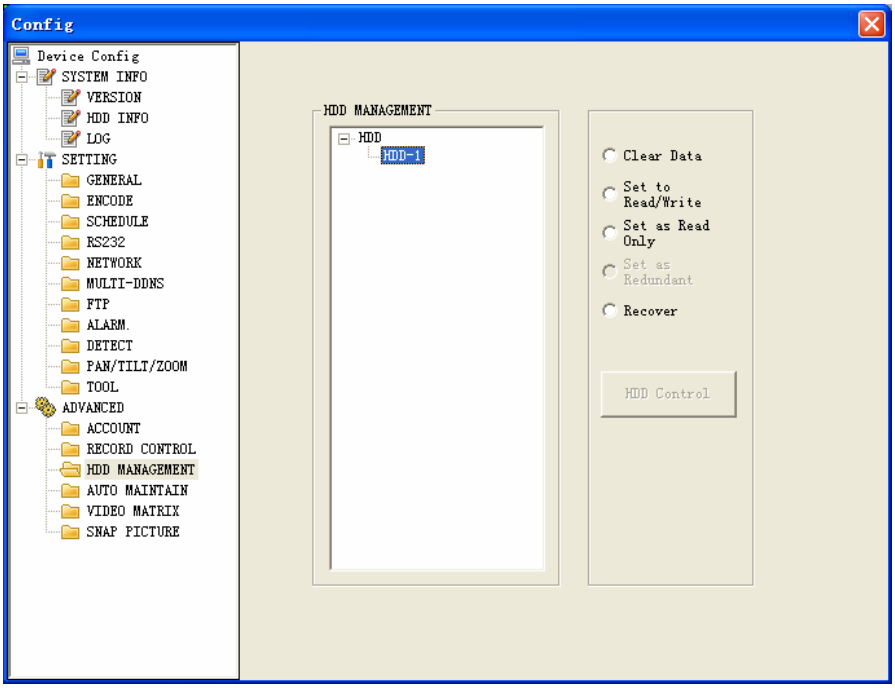


Figure 7-50

- **Auto maintenance**

Auto maintenance interface is shown as in Figure 7-51. Here you can enable auto reboot or auto delete old files function. (Need DVR supported)

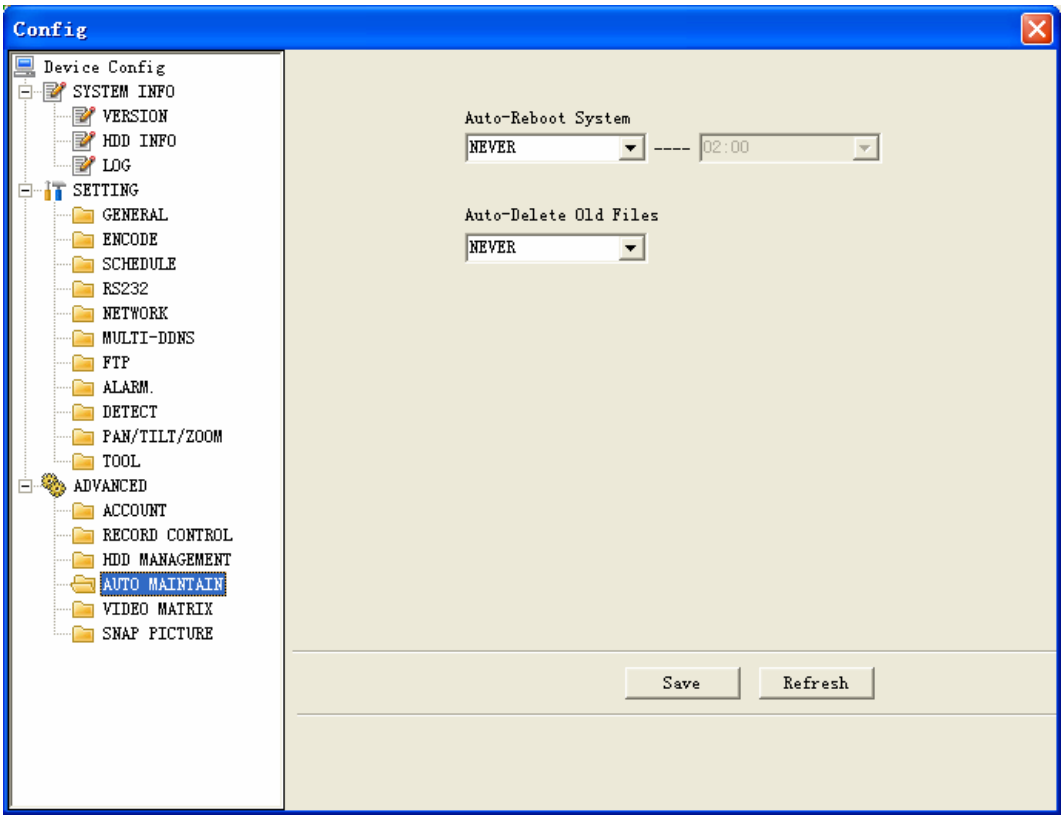


Figure 7-51

- **Video Matrix**

Video matrix interface is shown as in Figure 7-52. Please note this function needs DVR supported.

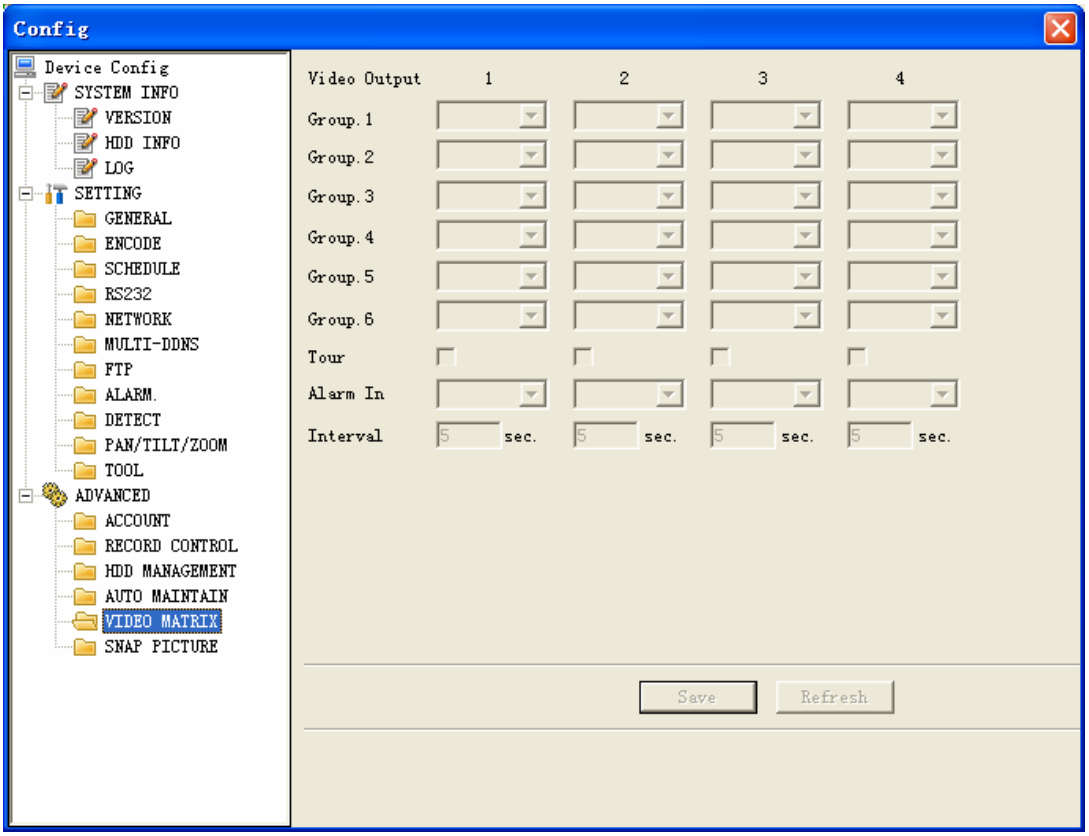


Figure 7-52

- **Snap Picture**

Snapshoot interface is shown as in Figure 7-53. Please note this function needs DVR supported.

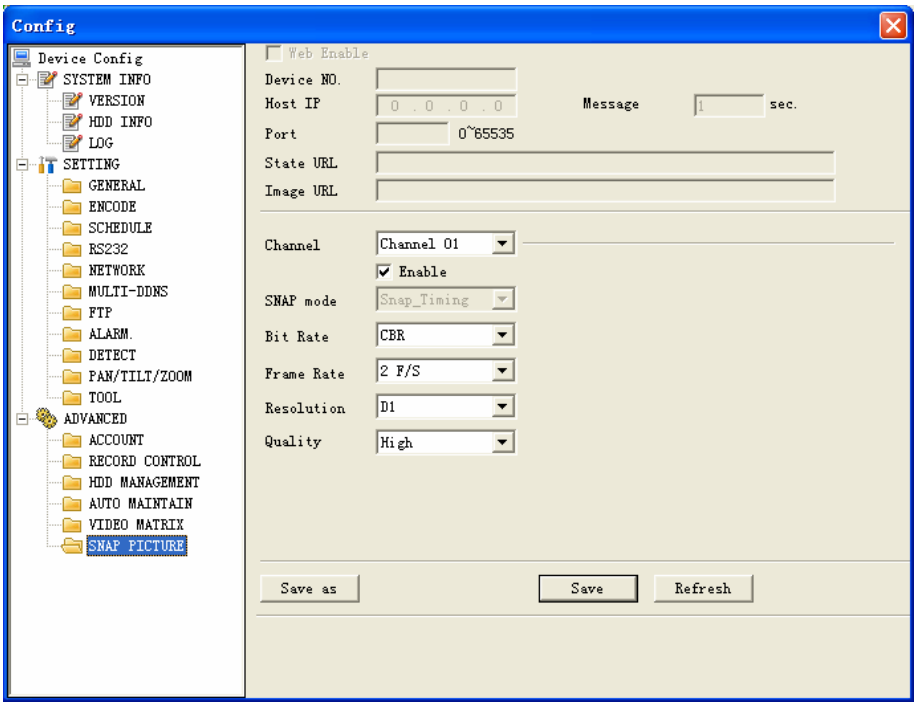


Figure 7-53

7.4 Search

Here you can select video type, channel number and time to search the file you want. Click search button, the interface is shown as below. See Figure 7-54
Please use page up/down key to view the search results.
Double click file name, you can view the file and system will automatically backup the image in you installation directory.

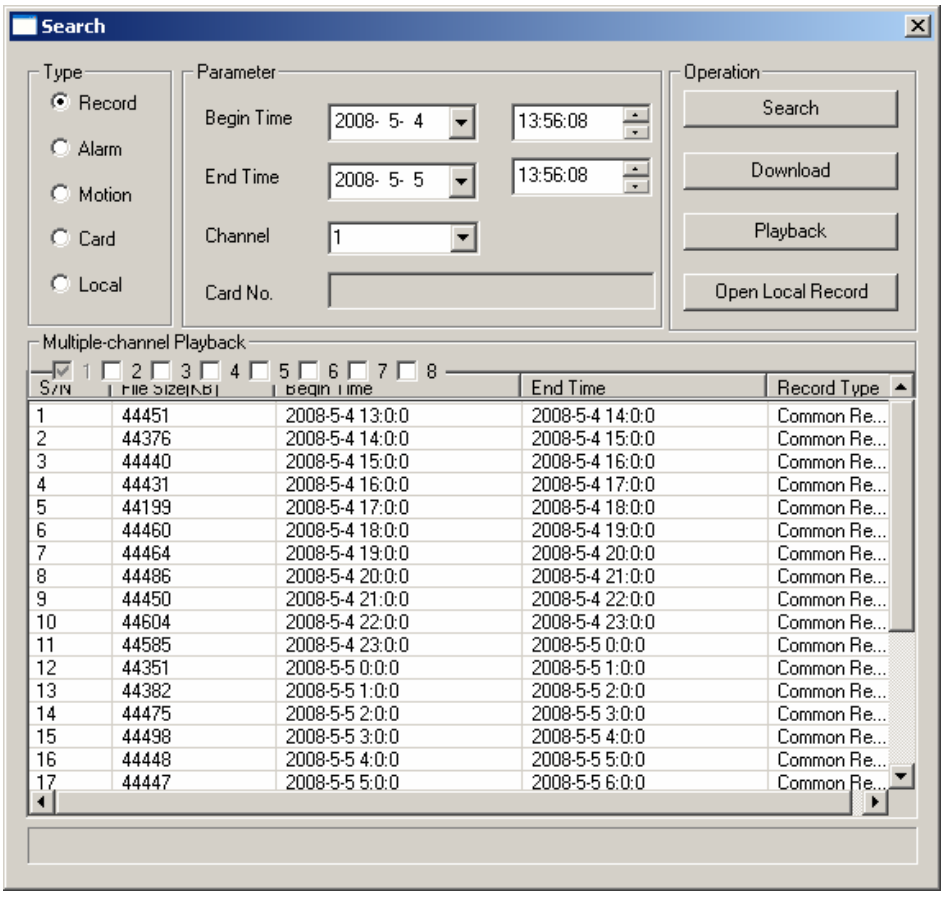


Figure 7-54

In the search result interface, you can select one or more files to download to your local PC.
The playback bar is shown as below. See Figure 7-55.
1: Play
2: Pause
3: Stop
4: Slow play
5: Fast play

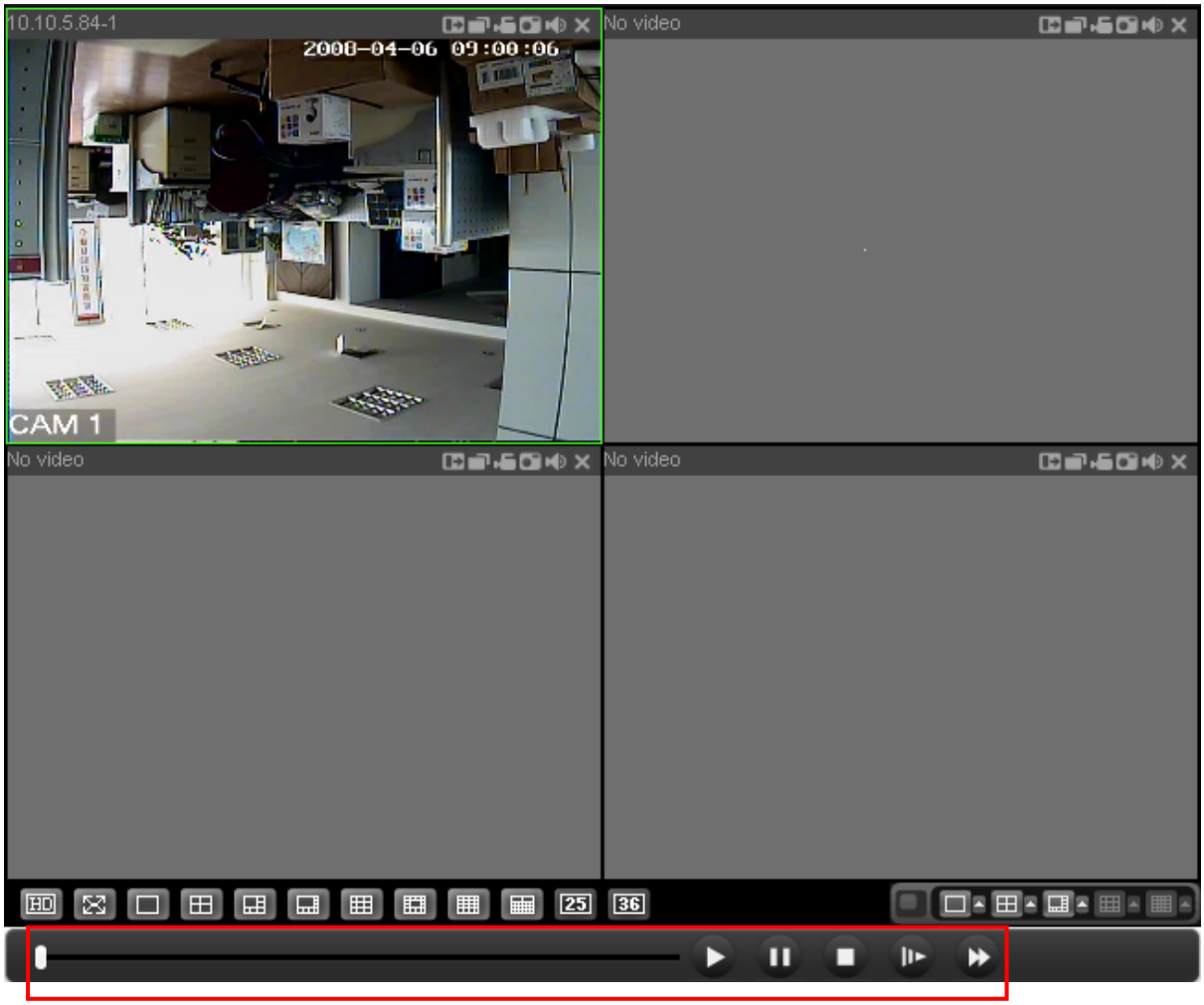


Figure 7-55

7.4.1 Download

You can select one or more files you want to download and then click down load button. System pops up a dialogue box asking you specify directory. See Figure 7-56.

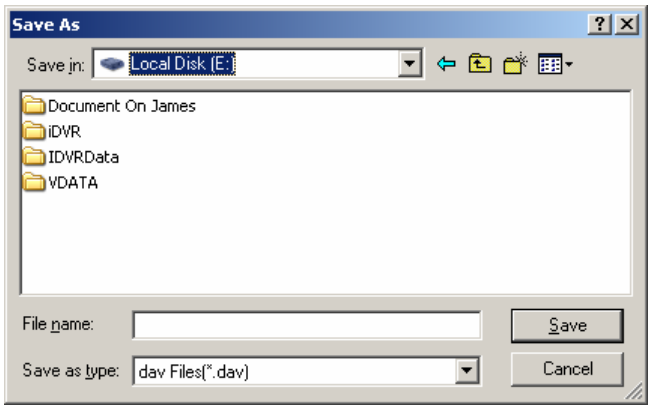


Figure 7-56

Then you can input file name and click save to backup file in your local pc. During the download process, there is a process bar for you reference. See Figure 7-57.

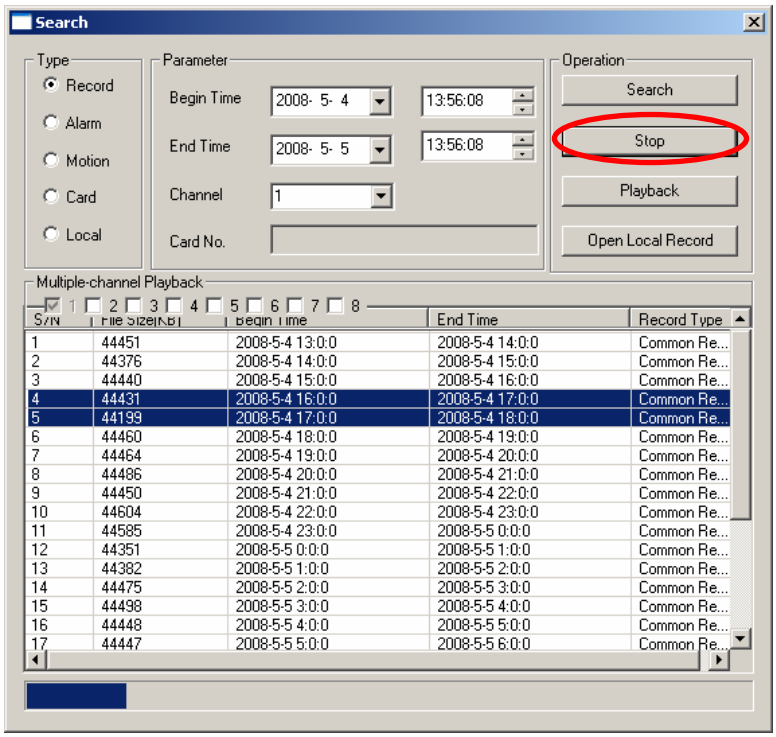


Figure 7-57

7.5 Alarm

Here you can set alarm type and alarm prompt audio file. See Figure 7-58.

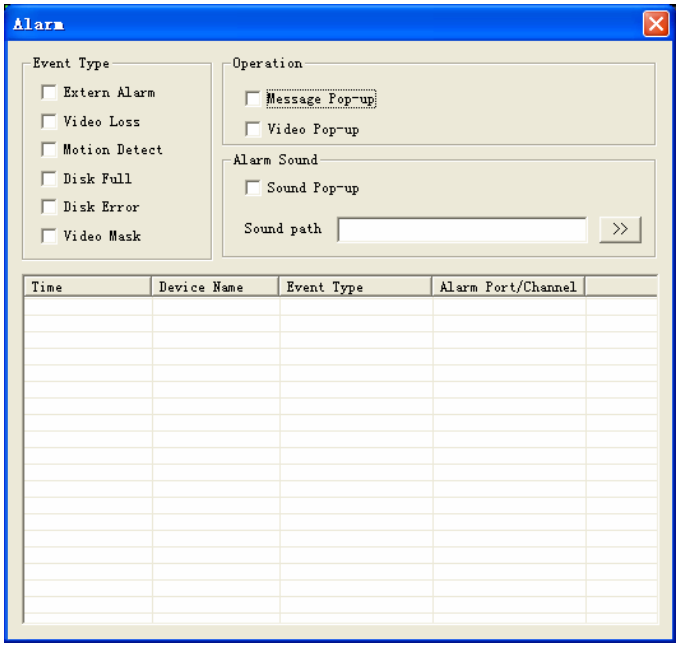


Figure 7-58

7.6 About

Click about button, you can view current web client information. See Figure 7-59.

Figure 7-59

7.7 Log out

Click log out button, system goes back to log in interface. See Figure 7-60.

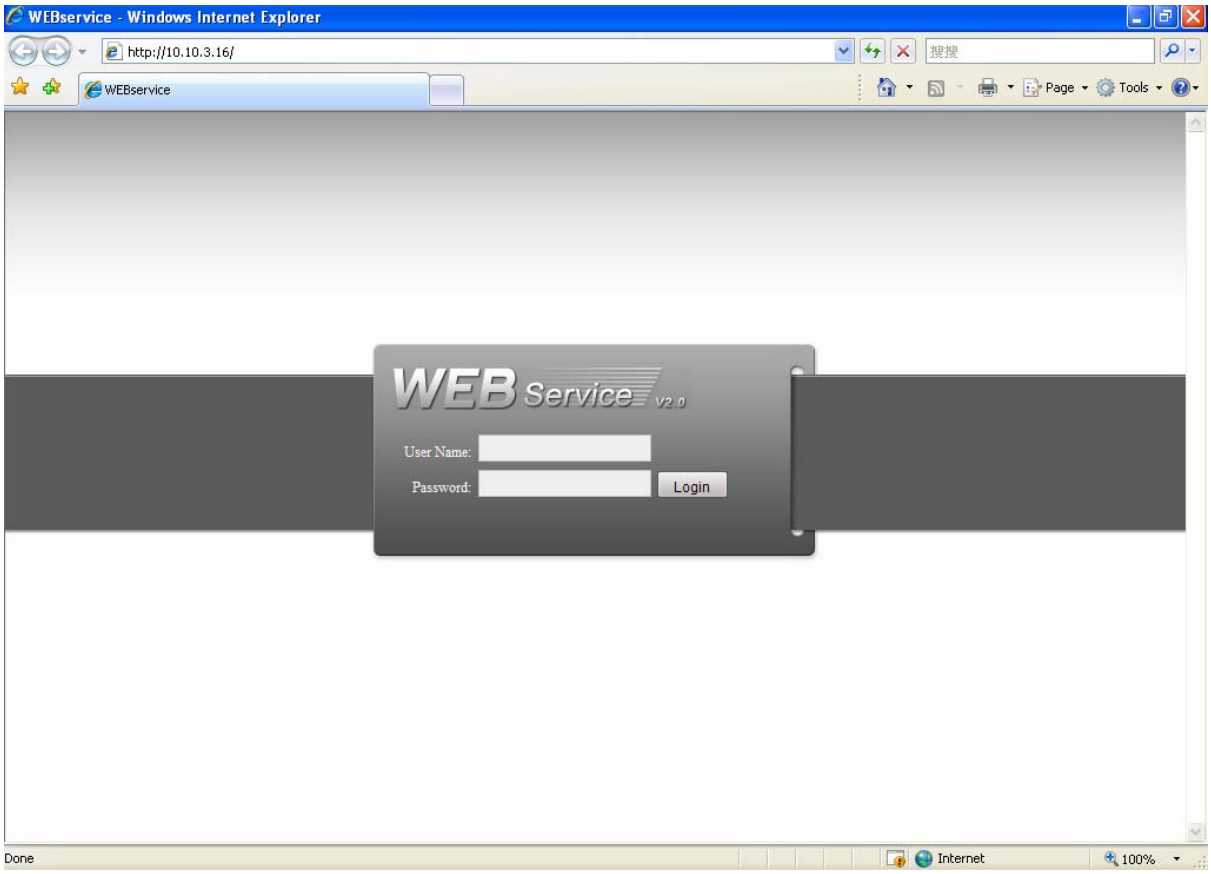


Figure 7-60

7.8 Un-install Web Control

You can use web un-install tool “uninstall web.bat” to un-install web control.

Please note, before you un-installation, please close all web pages, otherwise the un-installation might result in error.

8 Enterprise Professional Surveillance System

In this chapter, we introduce how to add devices and how to enable monitor function. For detailed operation, please refer to enterprise professional surveillance system user's manual.

8.1 Log in

Double click enterprise profession surveillance platform icon ( ).If it is your first time to use the system, you can see the following interface. See Figure 8-1.

Figure 8-1

After selecting a language, you can see the following interface. Here you can input user name and password to log in you selected server. The log in interface is shown as in Figure 8-2.

If it is your first time to use the system, you need to click add button to add a device first. Default central control server name is Local.

System default username and password both are admin.

Note:

For security reasons please modify your password after you first logged in.

Figure 8-2

8.2 Enable Monitor

After successfully logged in, please select the device and then click connect/disconnect button（ ）.

Select the channel you wan to view, click connect/disconnect button（ ） again.

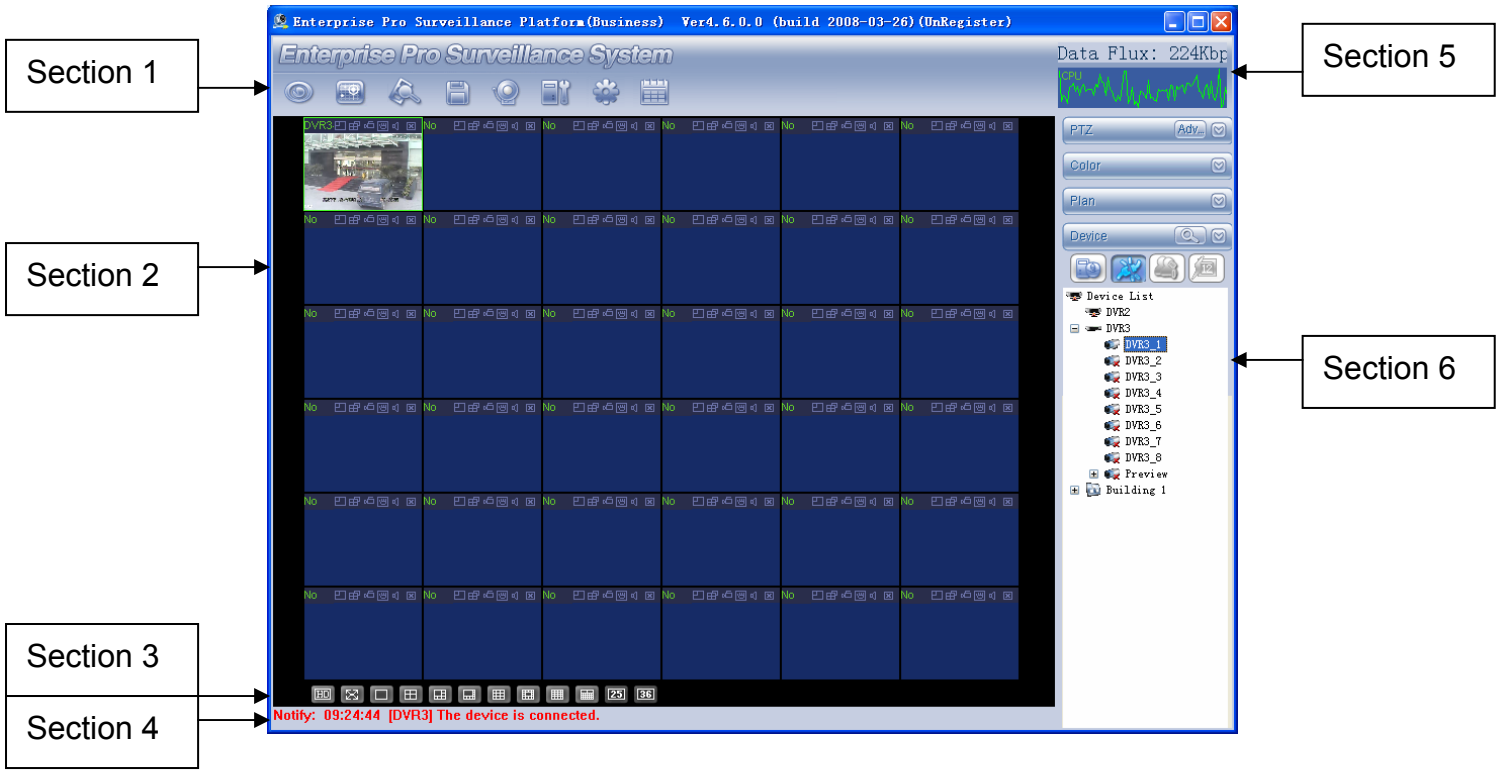


Figure 8-3

There are totally six sections:

- Section 1: There are eight function keys: monitor, E-map, record, save, alarm, configuration, log and system.
- Section 2: Here is for you to view channel video.
- Section 3: Here is for you to select display mode. System supports various display modes. HD item is for you to select priority between real-time and video fluency.
- Section 4: Here is for you to view current help information.
- Section 5: Here is to display data flux and CPU status.
- Section 6: There are four function buttons: PTZ, color, device, and plan. Please note system only supports one window in full-screen. Here we recommend resolution 1024*768.

Select a device name and then click connect/disconnect button, you can connect current device to network. You can see a little red -cross below the name disappeared.

Click one window on you left side and then double click channel name on you right hand, you can see the corresponding video in current window.

Please refer to Figure 8-4 for connection/disconnection information.

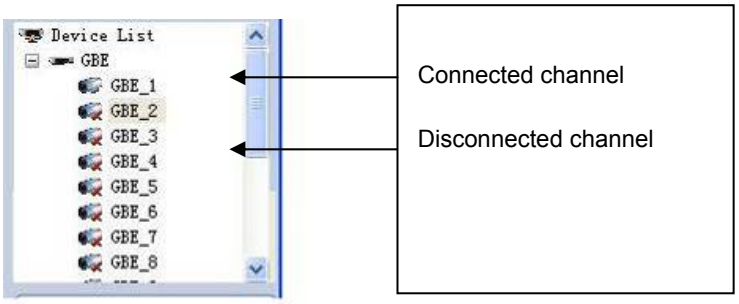


Figure 8-4

8.3 Add New Device

Click configuration button, you can see a network management unit shown as in Figure 8-5.

There are five function buttons, from left to right: device management, user manager, E-map, device configuration and upgrade.

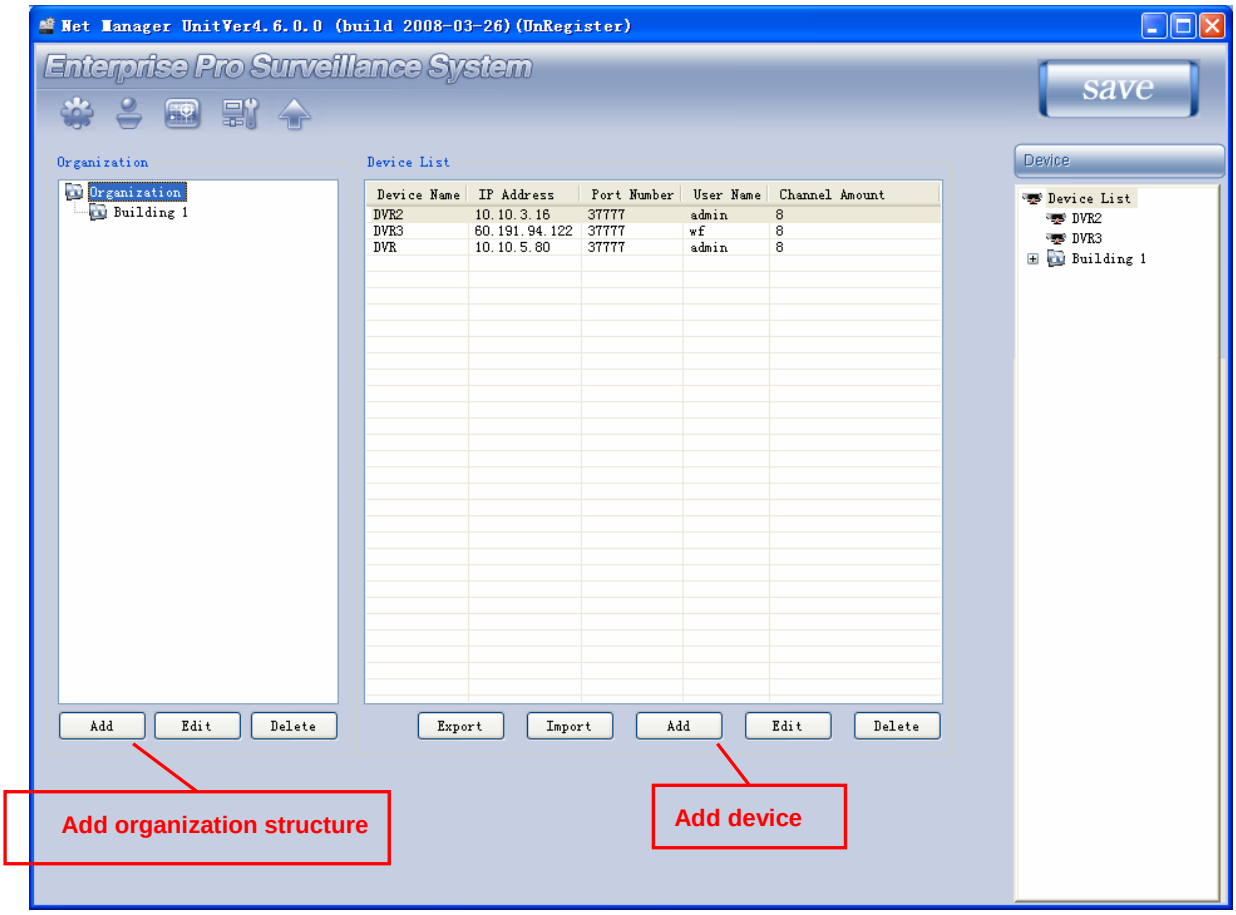

Net Manager UnitVer4.6.0.0 (build 2008-03-26)(UnRegister)
Enterprise Pro Surveillance System
save
Organization
Device List
Device
Organization
Building 1
Device Name
IP Address
Port Number
User Name
Channel Amount
DVR2
10.10.3.16
37777
admin
8
DVR3
60.191.94.122
37777
wf
8
DVR
10.10.5.80
37777
admin
8
Device List
DVR2
DVR3
Building 1
Add
Edit
Delete
Export
Import
Add
Edit
Delete
Add organization structure
Add device

Figure 8-5

9 RS232 Operation

9.1 Network Connection

Before serial port operation, please connect matrix with DVR through RS232. Then set DVR serial port protocol to the corresponding matrix protocol.
Note: please contact you local retail to confirm the DVR supports matrix protocol or not.

9.2 Keyboard

Control keyboard is very convenient for multi-DVR control, menu options and PTZ control. Select **keyboard control** from system **Setting＞RS232 ＞Function, and then** set **concerning** attributes such as protocol. Connect DVR RS232 port to shifter 25-pin RS232 port and then set proper control addresses for all connected DVRs. Now you can input DVR control address and use keyboard keys to set menu or control PTZ. See Figure 9-1.
Note：The keyboard works only when ACT light is on.

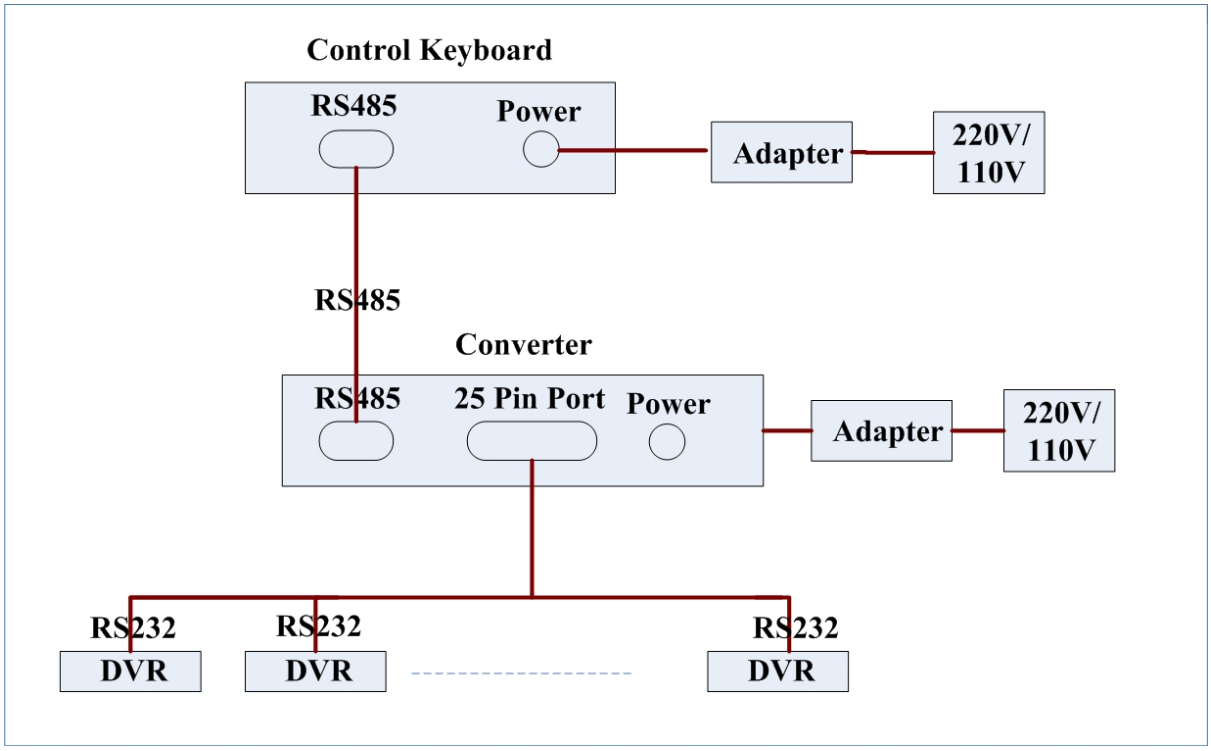


Figure 9-1

10 FAQ

1. This system can run in windows 98 or not?

Please install DIRECTX 7.0 or higher manually if you want to run this system in windows 98 environment.

2. System can not detect hard disk.

First check whether the hard disk is broken.

Then check jumper, IDE data cable and power cord. Please make sure they are appropriately connected.

When only one hard disk is connected to an IDE interface, this hard disk has to be jumped to master disc.

3. I can not use schedule recording function.

Please note the recording time unit takes one day as a working unit. E.g.: from 0 o'clock to 24 o'clock.

4. Recording light is flashing during the whole recording procedure.

Check the external video input signal. Such phenomena usually happen when the inputting signal is not standard.

Sometimes reading speed of HD is too slow, this phenomenon occurs. In this situation, you need to change hard disk.

5. My DVR is very hot, is there any problem?

DVR running procedures will generate a considerable hot. It is a normal phenomenon.

Please note DVR installation environment should be dry and clean. Keep ventilation openings smooth. Otherwise it will reduce system stability and lifelong

6. I can not see video signal on one channel while the other channels are ok

Check the video cable connection. You can connect camera video cable directly to monitor to test. If there is still no signal, there may be a problem with camera or video cable. If there is a video signal please contact your local suppliers for help.

7.I can not use my remote controller.

Check ACT light on the front panel is on or not.

- ATC light is on:

You need to change you remote controller battery.

- Act light is off:

Please move remote controller directly to the DVR, and then press address button. System pops up address input dialogue box. Please input you remote address (default value is 008). When act light is on, you can use it now

8.I can not control PTZ or dome

Check connection is right or not

Check system setup. Please refer to 5.3.8 pan-tilt setup.

Protocol should conform to dome (PTZ) setup.

Protocol is matched or not. You can contact you local supplier for more information

9. I can not login via web

There are two conditions:

- Network connection failure

Check your DVR and PC connection is right or nor. Please check DVR IP, network cable or use order ping to check.

- Invalid password or username

10. At the first beginning, the surveillance video is poor when I connected to server.

If the image can return to normal in five seconds, this phenomena is normal

12. What peripheral equipment DVR can work with?

DVR supports much peripheral equipment such as keyboard、matrix、 control decode card.、alarm input and output equipment、 alarm server and access control system.

Slight difference may be found in user interface.

All the designs and software here are subject to change without prior written notice.

Please visit our website for more information.

Appendix A HDD Capacity Calculation

Calculate total capacity needed by each DVR according to video recording (video recording type and video file storage time).

Step 1: According to Formula (1) to calculate storage capacity q_i that is the capacity of each channel needed for each hour, unit Mbyte.

$$q_i = d_i \div 8 \times 3600 \div 1024 \quad (1)$$

In the formula: d_i means the bit rate, unit Kbit/s

Step 2: After video time requirement is confirmed, according to Formula (2) to calculate the storage capacity m_i, which is storage of each channel needed unit Mbyte.

$$m_i = q_i \times h_i \times D_i \quad (2)$$

In the formula:

h_i means the recording time for each day (hour)

D_i means number of days for which the video shall be kept

Step 3: According to Formula (3) to calculate total capacity (accumulation) q_T that is needed for all channels in the DVR during **scheduled video recording**.

$$q_T = \sum_{i=1}^{c} m_i \quad (3)$$

In the formula: c means total number of channels in one DVR

Step 4: According to Formula (4) to calculate total capacity (accumulation) q_T that is needed for all channels in DVR during **alarm video recording (including motion detection)**.

$$q_T = \sum_{i=1}^{c} m_i \times a\% \quad (4)$$

In the formula：$a\%$ means alarm occurrence rate

Appendix B Compatible USB Drive List

NOTE: Please upgrade the DVR firmware to latest version to ensure the accuracy of the table below. If you use the USB drive, please confirm the format FAT or FAT32.

Manufacturer	Model	Capacity
Sandisk	Cruzer Micro	512M
Sandisk	Cruzer Micro	1G
Sandisk	Cruzer Micro	2G
Sandisk	Cruzer Freedom	256M
Sandisk	Cruzer Freedom	512M
Sandisk	Cruzer Freedom	1G
Sandisk	Cruzer Freedom	2G
Kingston	DataTraveler II	1G
Kingston	DataTraveler II	2G
Kingston	DataTraveler	1G
Kingston	DataTraveler	2G
Maxell	USB Flash Stick	128M
Maxell	USB Flash Stick	256M
Maxell	USB Flash Stick	512M
Maxell	USB Flash Stick	1G
Maxell	USB Flash Stick	2G
Kingax	Super Stick	128M
Kingax	Super Stick	256M
Kingax	Super Stick	512M
Kingax	Super Stick	1G
Kingax	Super Stick	2G
Netac	U210	128M
Netac	U210	256M
Netac	U210	512M
Netac	U210	1G
Netac	U210	2G
Teclast	Ti Cool	128M
Teclast	Ti Cool	256M
Teclast	Ti Cool	512M
Teclast	Ti Cool	1G
Teclast	Ti Cool	2G

Appendix C Compatible CD/DVD Burner List

NOTE: Please upgrade the DVR firmware to latest version to ensure the accuracy of the table below. And you can use the USB cable with the model recommended to set USB burner.

Manufacturer	Model	Interface	Type
Sony	AW-G170S	SATA	DVD-RW
Samsung	TS-H653A	SATA	DVD-RW
Panasonic	SW-9588-C	SATA	DVD-RW
Sony	DRX-S50U	USB	DVD-RW
BenQ	5232WI	USB	DVD-RW

Appendix D Compatible SATA HDD List

NOTE: Please upgrade the DVR firmware to latest version to ensure the accuracy of the table below. And SATA HDD should be used for the DVR with SATA port.

Manufacturer	Series	Model	Capacity	Type
Seagate	Barracuda.10	ST3750640AS	750G	SATA
Seagate	Barracuda.10	ST3500630AS	500G	SATA
Seagate	Barracuda.10	ST3400620AS	400G	SATA
Seagate	Barracuda.10	ST3320620AS	320G	SATA
Seagate	Barracuda.10	ST3250620AS	250G	SATA
Seagate	Barracuda.10	ST3250820AS	250G	SATA
Seagate	Barracuda.10	ST3160815AS	160G	SATA
Seagate	Barracuda.10	ST380815AS	80G	SATA
Seagate	Barracuda.9	ST3160811AS2	160G	SATA
Seagate	Barracuda.9	ST3120811AS2	120G	SATA
Seagate	Barracuda.9	ST380811AS2	80	SATA
Seagate	Barracuda.9	ST380211AS2	80G	SATA
Seagate	Barracuda.11	ST3750330AS	750G	SATA
Seagate	Barracuda.11	ST3500320AS	500G	SATA
Maxtor	DiamondMax 20	STM3320820AS	320G	SATA
Maxtor	DiamondMax 20	STM3250820AS	250G	SATA
Maxtor	DiamondMax 21	STM3160211AS	160G	SATA
Maxtor	DiamondMax 21	STM380211AS	80G	SATA
Maxtor	DiamondMax 21	STM340211AS	40G	SATA
Western Digital	Cariar SE	WD3200JD	320G	SATA
Western Digital	Cariar SE	WD3000JD	300G	SATA
Western Digital	Cariar SE	WD2500JS	250G	SATA
Western Digital	Cariar SE	WD2000JD	200G	SATA
Western Digital	Cariar SE	WD1600JD	160G	SATA
Western Digital	Cariar SE	WD1600JS	160G	SATA
Western Digital	Cariar SE	WD1200JS	120G	SATA
Western Digital	Cariar SE	WD800JD	80G	SATA
Western Digital	Cariar	WD1600AABS2	160G	SATA
Western Digital	Cariar	WD800BD	80G	SATA
Western Digital	Cariar SE16	WD7500KS2	750G	SATA
Western Digital	Cariar SE16	WD5000KS2	500G	SATA
Western Digital	Cariar SE16	WD4000KD2	400G	SATA
Western Digital	Cariar SE16	WD3200KS2	320G	SATA
Western Digital	Cariar SE16	WD2500KS2	250G	SATA